

Marine Review

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SHIPBUILDING

CARGO HANDLING

The National Publication Covering the Business of
Transportation by Water

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« EDITORIAL »

On Using Public Funds for Ship Construction

WHAT may be expected in the way of new merchant vessel construction and elaborate reconditioning? Though the actual present volume of such work is at a low point, there is a distinct feeling of optimism for the near future as soon as an orderly program of industrial control is decided upon and in operation. The present moment is one of rapidly changing conditions and at such a time it is natural to be cautious in initiating any contemplated project.

That there will be a definite stimulus to the marine industry in the commencement of various public works projects is certain. It is also reasonable to assume that public work funds will be applied directly for wisely conceived new ship construction and rebuilding. This would be as much in the public interest as the definite program for naval construction already authorized, and it would have the additional advantage of self liquidation. Money advanced at this time for wisely conceived new ship construction would be fully secured by the completed ship. Such a ship would have the earning capacity to assure repayment of the funds advanced.

An excellent example of this kind of a ship construction program is the building of a third liner to round out the service so successfully initiated by the MANHATTAN and WASHINGTON across the North Atlantic. All of the conditions for a wise and prudent use of public funds under the recovery act exist in this case. The owner and operator is thoroughly experienced. The value of the service and its profitable operation has been thoroughly demonstrated. A third vessel is needed and the owner is anxious to obtain such a vessel. It would add another outstanding vessel to the splendid new American merchant marine, the nucleus of which has been created since the merchant marine act of 1928 went into effect.

There are a number of other similarly conditioned merchant ship construction projects

which would fully meet all of the requirements in the recovery act for giving aid and encouragement to industry. From 80 to 85 per cent of expenditures in ship construction goes to labor, one-half in the shipyards and the other half in the industries supplying materials and equipment needed.

The test, as we see it, for every such project proposed should be:

1. Is the proponent thoroughly reliable and experienced?

2. Will the execution of the project be in the public interest in the usefulness and need of the service to be performed and can it be prudently anticipated to be self-supporting?

It goes without saying that favoritism of any kind has no place in arriving at a decision as to the merits of any proposal. Similarly no influence should be allowed any 'dog in the manger' attitude. It must be clearly understood, that successful projects of this kind can be carried out only by established experienced concerns of the highest reputation. It must not be looked upon as the opportunity for a slick promoter to obtain government funds. It is not difficult to carry out a plan for aiding ship construction and ship rebuilding from public work funds. All of the factors involved can readily be appraised with certainty and accuracy.

It may be taken for granted that hundreds of schemes will be presented for using public funds under the terms of the recovery act. It is obvious that a great responsibility rests on the public administrator and on the President in making certain that funds will be wisely used for projects that are really worthwhile and in the broad, national interest. The fundamentals underlying every project must be common sense, experience, and integrity. It is on this basis, and on this basis only, that the marine industry will benefit, and the nation as a whole will be well served in the utilization of public funds in merchant ship construction.

The government has in the shipping board a long established and experienced agency for passing upon the qualifications of proposals of this kind. Recommendation of the board should guarantee the need for and the practicability of any proposal offered.

MARINE BUSINESS IS SH

Some Bright Spots fr

MUCH stock has been taken of the depression. Tons of statistics have been used to show the record breaking depths of the decline. It is time to look for signs of better business. In doing so, specific items of improvement have their place. We propose in the following symposium to stick to good news. These high spots in the recovery of the marine industry are quoted from here and there, as they come, without any attempt at evaluation. They do indicate, however, that the tempo of business is beginning to resemble that of a lively march instead of a funeral dirge.

Boston Imports Increase

HEAVY increase in imports at Boston for the month of June. Custom duties collected were nearly three times those in June last year. The increase amounted to \$1,423,566. Duties collected in May and June show an increase of \$2,158,468 over the same months in 1932.

THE superliner, CONTE DI SAVOIA of the Italian line, sailed from New York on June 15 for Gibraltar, Cannes, Naples and Genoa with a total of 1603 passengers including 225 in the first class. This is the largest number of passengers to sail from New York for Europe on any transatlantic liner up to that time this year.

Cunard Business Improves

THE story of five Cunard-Anchor liners sailing from New York within 48 hours is as follows: BERENGARIA, June 29—976 passengers; FRANCONIA, June 30—booked full; CALEDONIA, July 1—booked full; AQUITANIA, week end cruise—sold out, and over 100 turned away; CARINTHIA, North Cape cruise—fully booked two weeks before sailing.

In addition to the five sailings mentioned the MAURETANIA on July 8, sailed on the first of a series of 12½ day cruises, booked solid, with passengers turned away at the pier. She carried 770 first class passengers, which is almost a record number for this ship. Subsequent sailings for the MAURETANIA and the FRANCONIA cruises when this was reported were booking so rapidly that the entire series of cruises promised to be a sellout.

One of the Cunard officials in commenting on these results said: "It looks as though the graph of steamship traffic after its long tumble has now taken an upward turn, which I am sure will continue."

Naval Shipbuilding

WHAT the naval shipbuilding program will mean to shipbuilding establishments in the United States and to labor in this and other industries is outlined in a statement issued by Col. Donald H. Sawyer, temporary public works administrator under secretary of the interior, Harold L. Ickes. Colonel Sawyer said in part:

"Work on the vessels will be under way soon . . . to speedily put the federal job creation dollar to work . . .

"In relieving unemployment and starting the wheels of industry, the building of ships is far reaching. Official estimates show that at least 18,400 men will be directly employed in government and private shipyards. An unestimated number of men in allied industries also will benefit . . .

"Ship construction draws upon every state for materials. More than 125 industries and mechanical trades are beneficially affected. Steel requirements alone are tremendous . . .

"Bids on 17 of the 32 vessels authorized by the President will be opened at the navy department on July 26 . . . If satisfactory bids are received, contracts will be awarded as soon as practicable after that date, carrying out the administration's policy of immediate employment. The other 15 vessels will be constructed in government navy yards."

Grace Increases Service

AS ANOTHER indication of the broad scope of business improvement and the extent to which steamship companies are participating in the upswing comes the following announcement from officials of the Grace line:

Passenger and freight traffic on Grace line ships to the West coast of South America has increased to a point where it is necessary to resume what is called its "B" service between New York and Valparaiso. Three ships are reinstated, the SANTA OLIVIA, SANTA INEZ and SANTA RITA. These ships were temporarily withdrawn

from this service last year.

With the reinstatement of these three ships and the additions to the fleet of the four new \$5,000,000 Grace liners which entered the California, service the first of this year, the Grace line has seven more ships in service in 1933 than it had in 1932—a total addition of 60,000 tons. The fleet now covering these two services totals fourteen ships.

The Grace line will thus offer weekly sailings on its New York to South America sailings as well as on its New York to California service.

To Modernize Naval Ships

ON JULY 12, Secretary of the Navy Swanson, outlining his objective in asking for \$127,000,000 of public works money in addition to the approved \$238,000,000 ship program, pointed out that \$77,000,000 of the additional amount was for modernizing ships and \$50,000,000 for shore station construction. The secretary said:

"We estimate that these construction plans will give employment to most everybody who makes shipbuilding a vocation. About 85 per cent of ship money goes to labor. It is spread out to many industries throughout the country.

"Out of the \$50,000,000 asked for shore station construction we are hopeful of getting enough for Pearl Harbor, Hawaii, and the Canal Zone to make our bases there effective."

Forty Ships from Lay-up

ON JULY 20 the Pittsburgh Steamship Co., Cleveland subsidiary of the United States Steel Corp. and largest vessel owner on the Great Lakes, issued orders for commissioning, as rapidly as possible, forty additional vessels, over and above the 31 that are already in commission. This company, will, therefore, have in service by the middle of August a total of 64 steamers and 7 barges engaged in the iron ore trade. Since the total fleet of this company is 72 steamers and 14 barges, that will be operating at nearly full capacity.

Other bulk steamship companies on the lakes are either operating at full capacity or placing additional vessels in service. As of Aug. 15, it is anticipated that from 70 to 75 per cent of

OWING IMPROVEMENT

om Here and There

the available Great Lakes fleet will be in operation. It may, therefore, fairly be said that the bulk shipping trade on the Great Lakes is rapidly approaching pre-depression activity. It is now generally believed that the remainder of the season will be one of continued and increasing activity.

BOOKED to capacity and with a large waiting list, the United States liner MANHATTAN sailed from New York on June 21 for Cobh, Plymouth, Havre and Hamburg with 1075 passengers.

Business on Up-Grade

CHARLES J. PANNILL, executive vice president of the Radiomarine Corp. of America, on June 27 said:

"Within the last week we have received contracts covering equipment in service for five ships for the Baltimore Mail line and two ships of the Continental Steamship Co., as well as vessels owned by the Isle Royal Transportation Co., the Atlantic & Caribbean Steam Navigation Co., and the Texas Co. We also have an order from the United States war department to equip twelve seagoing dredges of the corps of engineers with radio telegraph apparatus. Another order from the Pan American airways is for furnishing radio telegraph apparatus and radio direction finder to the S. S. JELLING.

"The company recently received from the Lykes Bros. steamship interests the largest single radio order ever placed by a private American concern, covering 67 vessels.

"It is particularly encouraging to learn that five tankers of the Standard Shipping Co. . . . will shortly be coming out of layup. To our radio business that is as good as a new order. To marine business generally I think it is further proof that the beginnings of better times are definitely with us."

Baltimore Shipping Active

THE Calmar line intercoastal service from Baltimore to the Pacific coast was recently placed on a fortnightly basis. This service was formerly on a monthly basis.

The intercoastal service of the Arrow line from Baltimore, effective with the sailing of the S. S. BARBARA CATES, has been stepped up to fort-

nightly instead of every three weeks as heretofore.

During July the Quaker line had four arrivals in Baltimore and will thereafter maintain a 10-day eastbound intercoastal schedule in place of the former 14-day schedule. The steamer SAN LUCAS, until recently tied up in the Colombia river, has been recommissioned. She arrived in Baltimore a little before the middle of July with a cargo of lumber and general merchandise from Pacific coast points.

Moore McCormack announced that with the sailing of the motorship BONEVILLE from Baltimore on July 10, the Mooremack line to the east coast of South America will resume fortnightly sailings.

A new intercoastal service has been inaugurated from Baltimore by the Pacific Coast Direct line. Sailings will be maintained every three weeks and vessels of the Weyerhaeuser Timber Co. will be employed in the trade. General cargo will be accepted westbound and lumber will be carried eastbound.

Further indications of increased activity in industrial shipping is indicated in the commissioning of four laid up ships by the Ore Steamship Corp. which will be placed in service by the Bethlehem Steel Co. in the Sparrows Point trade. The vessels will carry iron ore from Chile to the local plant and represent a further expansion in steel producing activity at Sparrow's Point, Md.

Three vessels of the Standard Shipping Co., laid up in the Patuxent river, have been recalled to active service. The vessels are the BEACON-OIL, the CHRISTY PAYNE and the L. J. DRAKE.

Houston Shows Gain

COMMERCE through the port of Houston for the month of May exceeded that of any previous month in the history of the port. A total of 211 seagoing vessels arrived and 210 departed from the port, carrying 1,427,991 short tons of cargo, which is an increase of 36.8 per cent over the same month of 1932. There was a marked increase of all kinds of traffic, imports and exports, inbound and outbound to Gulf, Atlantic and Pacific coast ports, particularly to the North Atlantic which showed an increase of 57 per cent.

The first five months period of 1933 indicated an increase of 22 per cent

in tonnage over that of 1932, 25.2 per cent over 1931 and 4.77 per cent over 1930, the previous banner year. This increase was not in cotton and oil alone, the major items of export, but in general commodities such as rice, coffee, sugar, canned goods, steel, fertilizer, vegetable oils, etc.

ON MARCH 1 at the port of New York, 700 units of railroad floating equipment were at work. On June 30 an additional 100 lighters and barges had been taken out of layup and put into commission, and a further substantial pick-up by fall is anticipated.

More Traffic at Albany

TWICE as much freight by vessels was received at the port of Albany during the first five months of this year as in the first five months last year, according to officials of that port.

Up to June 1 of this year more than 130,000 tons were handled at the docks of the port, as compared with 58,000 tons for the first five months of 1932. Sixty vessels used the port in this period this year as compared with 19 during the first five months of last year.

Passenger Travel Heavy

THE United Fruit Co. is receiving heavy vacation bookings, according to W. M. Penick, passenger traffic manager. The new turbine electric liners are meeting with great popularity particularly on the 17-day cruises to the Canal Zone and Costa Rica via Havana and Jamaica. The adventure cruises to Honduras and Colombia, 12 to 18 days, are also being exceptionally well patronized. The response to these offerings indicates according to Mr. Penick, that the bookings this summer will top last year despite the fact that 1932 set a record for summer vacation travel to the Caribbean on United Fruit line steamers.

Demand for accommodations over the Fourth of July week end on vessels of the New England Steamship Co. was so heavy that all three of its services from New York to Fall River, New Bedford and Providence were sold out, and it was impossible to provide sufficient space.

It is estimated that the company's

Fall River steamer carried 1000 passengers on her sailing June 30, while the new Bedford steamer carried about 600 passengers and the Providence steamer, leaving the same day, 300 passengers.

R. H. Pusch, passenger traffic manager of the New England Steamship Co., said that this movement is still another indication that the company will enjoy one of the best summer vacation seasons in years.

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IN A RADIO address July 14, A. M. Tode, national president of the Propeller Club of the United States, said that several American steamship companies have preliminary plans under way to build additional vessels in the United States. A number of these companies expect to place orders within the next 12 months.

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Excellent Cruise Business

THE Colombian Steamship lines new express passenger service between New York, Haiti, Jamaica, Colombia and Panama, established last year, has been enjoying excellent business from the start, and its new ships have, on numerous occasions, left New York with capacity bookings, not only during the winter months but in the current summer season as well.

C. H. C. Pearsall, vice president and general manager of the Colombian line, commenting on the success of the new passenger service said:

"We are gratified over the response of the American traveling public to our new ships, and I am firmly convinced that tropical America, which was long regarded as a winter playground, has at last come to occupy an important position as an all year around field for vacation."

Mr. Pearsall attributes much of the Colombian line's success to the company's fleet of cruise liners, including the new sisterships COLOMBIA and HAITI, and the popular liner PASTORES.

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Near Capacity Bookings

WHEN the Furness Bermuda line's new flagship, QUEEN OF BERMUDA, sailed from New York, July 1, on a four day cruise, she carried a near capacity list of passengers, at least 700, according to Capt. C. M. Armstrong, passenger traffic manager of the line.

He also said that the New York Bermuda summer travel season beginning with the departure of the QUEEN OF BERMUDA, promises to be even better than the previous season, despite the fact that the Chicago World's fair is attracting many vacationists this year.

The summer season of 1933 will also

be featured by the Furness Bermuda line maintaining two sailings a week with the QUEEN OF BERMUDA and her sistership MONARCH OF BERMUDA. These two vessels will enable the company to take on approximately 1500 passengers a week from New York. Based on the expected continuance of the present volume of passenger travel to Bermuda the line plans to open its large new modern hotel at Hamilton in August. It has only been operated in the winter season in the past and has never been opened before December.

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Commerce at Los Angeles

IN ITS monthly review the Los Angeles chamber of commerce records especially notable improved conditions in water commerce in the increase in lumber receipts during the month of June. During this month 52,138,000 board feet of lumber arrived at Los Angeles as compared with less than 40,000,000 board feet during May and the low point of 19,000,000 in February.

Lumber receipts for June were 50 per cent greater than those of June a year ago. For the year ending June 30, however, lumber receipts were only 385,214,000 board feet, which is 50,000,000 feet under the receipts for the year ending June 30, 1932, and less than one-half of the receipts for the year ending June 30, 1931. The encouraging feature, however, is the very definite current increase over a year ago.

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Gain in Income Reported

THE Atlantic, Gulf and West Indies Steamship Co. showed a net income in April of \$66,298 as against a net loss of \$175,227 in April, 1932. First four months net income for this year amounted to \$389,160 as against a net loss of \$32,819 for the same period in 1932.

For the four months ending April 30, 1933, the American Hawaiian Steamship Co. showed a net profit of \$128,168 after all charges, but before depreciation, as against a loss of \$459,898 in the same period in 1932.

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Shipping Improvement

THE department of commerce reports that merchandise shipments through the Suez canal during the first quarter of this year showed a gain of 731,000 metric tons over the corresponding period last year. Traffic through the United States and Canadian locks at Sault Ste Marie canals during June, 1933, amounted to 3,582,282 tons, an increase of 1,594,400 tons

over June, 1932. Traffic through the Welland canal during June this year showed an increase of 174,226 tons over June last year. Traffic through the St. Lawrence canals during June this year increased 91,645 tons over June, 1932.

Cargo traffic at Italian ports increased more than 4 per cent for the first quarter of this year as compared with the similar period last year. Large movements are reported at German ports. Tonnage arriving at British ports and Hongkong has also picked up recently, according to the department of commerce reports.

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DUTY receipts at the port of New York for June continued the upward trend begun in May. The end of fiscal year, however, indicated a total of almost \$44,000,000 less than in the preceding twelve months. The encouraging feature at the present, however, is that the current receipts are showing a steady upward tendency.

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Munson Line Travel Gain

MUNSON Line special tours and cruises from New York to South America are proving especially popular. The SOUTHERN CROSS, sailing from New York, June 24, carried a passenger list far ahead of the corresponding sailing a year ago. The WESTERN WORLD, sailing July 8, also carried a passenger list in excess of last year. To meet the increasing demand for cruises the company is placing the SOUTHERN CROSS on the South American cruise, sailing Aug. 5.

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Successful Summer Season

SUMMER vacation travel to Cuba on the Ward line continues heavy and from present indications this season's total passenger traffic will exceed the record number of last year, according to M. Seckendorf, passenger traffic manager. He is enthusiastic over the passenger outlook for his company's services not only in the direct New York-Havana run, but also between New York and Mexico and Havana and Mexico.

Conditions have undergone so marked an improvement in Cuba and the company's recent experiment of operating the ORIENTE on an all expense cruise from Havana to Mexico proved such an outstanding success that the line has scheduled three similar cruises, leaving Havana, Aug. 12 and 26 and Sept. 9. The total passenger list of the ORIENTE leaving Havana, July 15, was 250, including 106 Cubans and 144 Americans. The all expense cruise in the Mexico-New York service also exceeded expectations, in the large number of Mexicans carried

Code of Fair Practice Is Presented

by Shipbuilders and Shiprepairers

ON JULY 12 the shipbuilding and ship repairing industry, submitting its code of fair competition to Gen. Hugh S. Johnson, administrator of the national industrial recovery act, applied for hearings prior to July 26 when bids in the navy's \$238,000,000 new ship construction program are to be opened. Public hearings on the code began on July 19 at Washington and continued throughout the two following days, without reaching an agreement between the industry and labor on minimum wages and working hours. The industrial recovery administrator following hearings immediately began preparing recommendations so that the President could give his final approval of the pact before July 26.

The main questions of difference between the industry and labor were the number of hours of work per week and the minimum wage rate. The industry holding out for a 40-hour work week and a minimum rate of pay of 40 cents an hour in the North and 35 cents per hour in the South, while the labor organization demanded a 30-hour week with a minimum weekly wage of \$25 or 85 cents per hour without differential. The labor representative, on the ruling of deputy administrator Whiteside that substitutes for specific sections only would be in order proposed the following:

"No employee, except members of the supervisory staff, shall be employed in excess of 30 hours, or more than 5 days in any one calendar week; nor more than 6 hours in any one day. No overtime will be permitted, except the maintenance and repair personnel and then only in cases of extreme emergency. All overtime work in excess of scheduled number of hours shall be paid for at not less than double time."

Forty-Hour Work Week

At the end of the hearings both sides stood by the proposals made. It is felt that the President's blanket code has a direct bearing and that it fitted the shipbuilder's code almost perfectly. The feeling was that the industry might compromise on wages by raising the proposal to 40 cents and 45 cents an hour respectively, but that it is determined to stick by the 40-hour week.

In connection with the minimum wage scale referred to in the code, the letter covering presentation of the code called attention to the fact that the wage scale in the shipbuilding and ship repair industry has been

substantially higher than that prevailing in many other private industries. A large percentage of the employees are skilled mechanics and are paid on a basis which averages practically double the minimum wage rate proposed.

It was apparent during the hearings that the two questions of major importance was a matter of over expansion of shipbuilding capacity and the necessity of the 40-hour week if work is to be economically prosecuted. The revised code of the industry specifically prohibits material increase of plant capacity during the period of the recovery act. The exact provision is quoted in full below in connection with terms of the code.

Present Facilities Are Ample

No repetition is wanted of the over expansion of the industry experienced during the war, nor is any such expansion needed. It was the unanimous opinion of the leaders of the industry who signed the code, representing 90 per cent of those engaged in this business, that no expansion is warranted on the basis of need to carry out the naval program or any anticipated amount of merchant work.

Among those who vigorously supported this stand were: Clinton L. Bardo, president of the New York Shipbuilding Co.; Homer L. Fergu-

Compromise Agreed On

IT IS understood that an agreement was reached on July 24 between General Hugh S. Johnson, administrator of the industrial recovery act, and representatives of shipbuilders and ship repairers in which the industry's code of fair competition was revised, reducing the proposed work week of 40 hours to a 32-hour week in shipyards doing government construction and a 36-hour week in other yards and in connection with repair work.

Provision in the code prohibiting expansion of plant facilities and creation of new shipyards was eliminated. A minimum rate of pay of 35 cents an hour in the South and 45 cents in the North, it is understood was decided upon.

Details of the compromise agreement were not made public but it is likely that a 40-hour week will be permitted on emergency repair work as long as an average of 36 hours is maintained.

President Roosevelt signed the revised shipbuilders code, July 26.

son, president of the Newport News Shipbuilding & Dry Dock Co.; and Lawrence Y. Spear, vice president of the Electric Boat Co. All emphasized the fact that present facilities are ample for all naval and private work and pointed out that the present wide unemployment in this highly skilled industry is due to lack of work.

The position of the shipbuilders with reference to expansion was also supported by Rear Admiral E. S. Land, chief constructor of the navy, who held that no new shipyards were necessary and that existing private plants and navy yards have ample facilities for the program in sight. Admiral Land also supported the request of the shipbuilders for a 40-hour work week. He was of the opinion that such a schedule will give employment to practically all skilled artisans available in the shipbuilding trade. He explained that a 30-hour week would not be practicable because there is a considerable amount of work of a special emergency nature on which only one shift can be employed and where it is necessary to work occasionally for longer hours so as not to seriously delay the general progress of the work.

Mr. Spear also referred to the impracticability of a 30-hour work week for the shipbuilding industry and estimated that the 40-hour schedule proposed in the code would bring employment in the industry to 80,700 men at the peak of the naval program as compared with its 30,000 workers at the present time.

W. H. Gerhauser, president of the American Shipbuilding Co., referred to problems in connection with a too limited work week in the construction and repair of vessels on the Lakes.

Shorter Hours Increases Cost

H. G. Smith, president of the National Council of American Shipbuilders, and vice president of the Bethlehem Shipbuilding Corp. in presenting the industry's code declared that the naval construction program will provide at its peak, on the basis of the 40-hour week, a volume of work requiring employment of about 15 per cent over that prevailing at any time during the last ten years.

At the suggestion of deputy administrator Whiteside, an additional provision was added to the shipbuilders code calling for a report on the first and fifteenth of each month on the total number of employees at work.

In answer to direct questions by the deputy administrator, H. G. Smith
(Continued on Page 38)

Arbutus, Lighthouse Tender, Twin Screw, Steam Drive

CONTINUING the program of modernizing its floating equipment, the Lighthouse service of the department of commerce is placing the ARBUTUS, recently completed by The Pusey & Jones Corp., Wilmington, Del., in service in the second lighthouse district, Boston, replacing the Tender AZALEA. The ARBUTUS is a substantial steel vessel with steel deck-houses and is fitted with a steel mast and boom of 20 tons capacity for handling buoys and other lighthouse equipment. The boom is served by a powerful four-drum steam winch located in the forward hold.

Vessel Completed June 6

The new vessel was launched on March 25 and completed June 6, 1933. Her length overall is 174 feet, 7½ inches; length between perpendiculars, 163 feet 6 inches; breadth molded, 32 feet even; depth molded, 14 feet 6 inches. On a mean draft of 10 feet, 7 inches the load displacement is 770 tons in salt water. Her gross tonnage is about 685 tons. Total bunker fuel oil capacity is 102.5 tons. The speed

of the ARBUTUS is 13.71 miles per hour.

Propulsion is by twin screws, each driven by one three cylinder, triple expansion, steam engine of 11½ x 19 x 32 inches diameter cylinders and 24 inches stroke. Each engine develops 500 indicated horsepower at 150 revolutions per minute; making a total of 1000 horsepower. The engines were built by the Pusey & Jones Corp.

Watertube Boilers Furnish Steam

Steam is supplied by two watertube boilers built by the Foster Wheeler Corp., New York. Total square feet of heating surface is 2514, and the maximum working steam pressure is 225 pounds per square inch though the pressure used in operation is 200 pounds. The boilers are oil fired, with equipment supplied by Schutte & Koerting Co.

Among the engine room auxiliaries are two electric generators supplied by the General Electric Co. The pumps consist of one main circulating pump; a sanitary pump; fire and bilge pump; main air pump; main feed pump; auxiliary feed pump; a fresh water

pump; two fuel oil service pumps, and one fuel oil transfer pump. The pumps were furnished by the Schutte & Koerting Co., the M. T. Davidson Co., and the Rumsey Pump Co. There is one main condenser serving both engines.

The loading equipment, which is important in the service of a tender handling heavy buoys and other equipment, consists of one 20 ton derrick mast and a 50-foot boom, one powerful double steam winch with 6¼ x 8 inches cylinders, and four drums. This winch is located in the cargo hold just aft of the cargo hatch through the main deck. The hatch is 8 feet 4 inches by 9 feet in size. This winch was supplied by the Lidgerwood Mfg. Co., Elizabeth, N. J. The spur-gearred steam windlass and steam steering engine were also built by the Lidgerwood Mfg. Co. The windlass has an extended shaft to capstan on the forecastle deck.

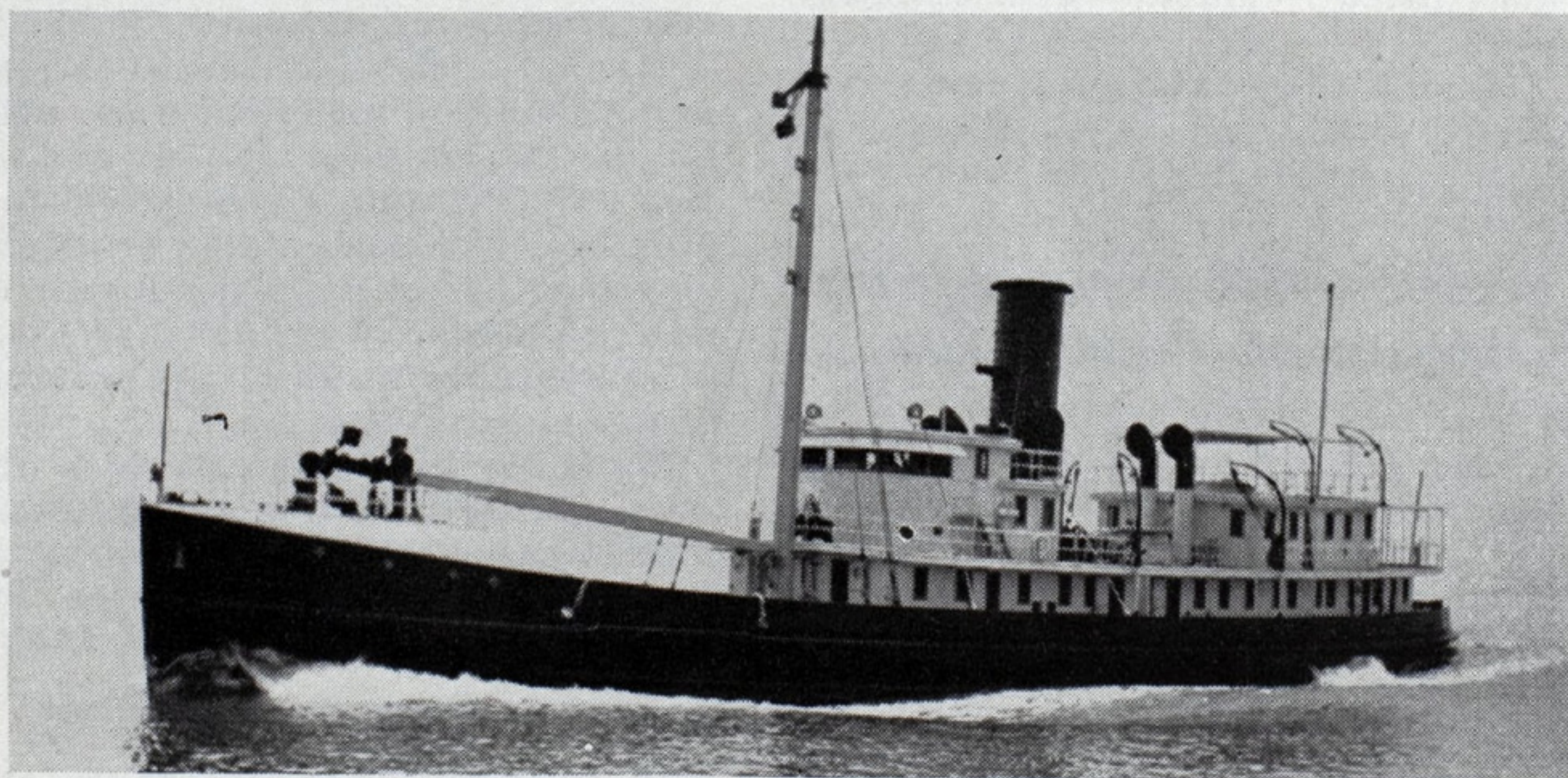
On the main deck in the forward part of the house is a refrigerating room for ship's provisions. Refrigeration is by Frigidaire Corp. equipment.

The crew is located on the lower deck forward and the petty officers on the lower deck aft. The forecastle contains crew's washrooms, toilets, deck stores locker and lamp locker. The steel main deck house contains the galley, crew's messroom, engine and boiler casings, officers' staterooms, baths, pantry and dining room.

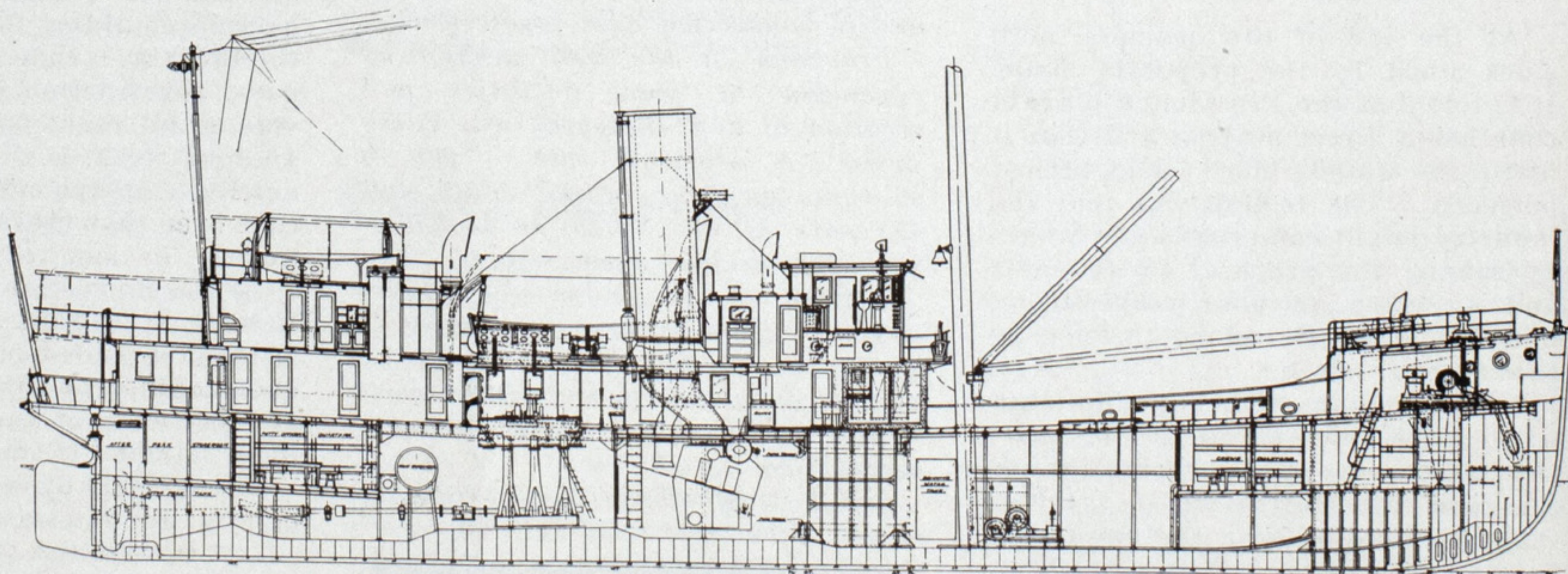
Quarters for Superintendent

On the upper deck forward is located the pilot house with the masters' quarters and bath adjoining. Aft on this deck are located, the superintendent's stateroom, spare stateroom, superintendent's dining room and bath, and the radio room. There are also located on the upper deck a 24-foot power boat, a 24-foot cargo boat and a steam driven boat hoist. A 16-foot dinghy is located on top of the upper deck house aft.

Fuel oil tanks are located at the forward end of the boiler room. The drinking water tank and the galley fuel oil tank are located in the forward hold. Feed water for the boilers is carried in a built-in tank located under the crew's quarters forward.



ARBUTUS —
Twin screw,
reciprocating
steam engines.
Speed 13.71
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Lighthouse tender,
built by
The Pusey &
Jones Corp. for
the Lighthouse
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What the Radio Means to Shipping

Traditions of Service Maintained

By Lawrence G. Green

S EARCH the ships of the world for signs of change and progress that are revolutionizing ocean transport, and you will find the most striking contrasts in the wireless cabin.

Thirty years ago there was no law compelling even a large passenger ship to be equipped with wireless. There are many vessels still in service that once sailed isolated—cut off from civilization when the last land dropped astern. But in thirty years wireless has made strides more rapid than the transition from sail to steam, and from steam to diesel engines.

Where is the coherer now—the first primitive receiver with its iron filings that jumped feebly when a message struck the aerial? It is a museum specimen, like the spark coil, the magnetic detector and the crystal. The little wooden box on the boat deck that housed “sparks” and his new fangled gear—an object of amusement or half concealed contempt—has grown into a suite of rooms, packed with intricate mechanism and operated by a staff of skilled men.

Have Modern Radio Gear

Down below, firemen may still be flinging coal into old-fashioned furnaces; the engineers tending machinery built early in the century. But whether the ship is old or new, the radio gear is up to date. This electrical magic is the most wonderful part of the ship's equipment.

Atlantic liners in 1909 carried spark transmitters with a range of 150 miles in daylight in clear, dry weather, and further at night. Storage batteries were used for the emergency set, when the dynamo in the engine room failed as a result of a collision, and the call for help could not be heard more than sixty miles away.

There are comparatively few spark sets, even of the modern design, crackling in the ether today. They have been replaced by the vacuum tubes that work silently over thousands of miles. When the mail boat leaves Southampton bound for the Cape, she is in touch immediately with the South African coast wireless stations. Press messages from America, England and South Africa are received throughout the voyage. Though atmospherics rattle and thunder in the head 'phones, the words come through in ringing notes.

Some of the largest liners now carry

four radio transmitters for special purposes. Passengers can pick up a telephone beside their beds and talk to friends in London or New York. The radio-compass is adjusted to an invisible “lighthouse” on shore, and the ship steams on through fog, certain of her position.

During a voyage in any passenger ship nowadays you may notice the wireless men erecting little masts and aerials in the motor lifeboats. They test the apparatus by signalling to passing ships. The lifeboat set today has a wider range than the main installation of an Atlantic liner had thirty years ago. After the ship has gone down, the lifeboats continue sending out the S O S.

First Distress Call

Even this dramatic distress call has changed. At first the old land line telegraphic call of C Q (all stations) was adopted. As this did not sufficiently express the urgency of a call for help at sea, the signal C Q D was adopted—interpreted quite wrongly by laymen as “come quickly, danger.” It was superseded in July, 1908, by S O S, chosen purely because it was distinctive and easy to send—just three dots, three dashes and three dots. It does not mean “save our souls.”

When the S O S call is sent out, all stations within range must cease ordinary work at once and repeat the message until the rescue of the distressed vessel has been organized. In recent years the call has been abused—some captains become panicky long before there is any danger of their vessels sinking. Thus it is probable that an intermediate call will be arranged, indicating that while assistance may be needed, there is no immediate danger.

The first disaster in which the S O S call was sent out was the TITANIC. One of the lessons learnt as a result of this and other tragedies in mid-ocean was that a passenger liner needed more than one operator. After the war, liners carried two, and for some years now there have been three operators in every passenger ship. The work on the Atlantic run has increased to such an extent that a few ships now have a wireless staff of eight experts. With hundreds of words of press to receive for the daily newspaper published on board, traffic from passing ships, passengers' messages, ocean letters, tele-

phony duties, weather and iceberg reports, time signals and direction finding work, they are all kept busy.

Freighters which still carry only one operator are often fitted with an automatic alarm which rings a strident bell when an S O S message is received. There is little chance of a distress call failing to be heard nowadays.

The proverbial courage of wireless operators in times of peril is one tradition of the service that has come down unchanged since the first Marconi sets were installed. Jack Binns of the American liner REPUBLIC, and Jack Phillips of the TITANIC, the prewar heroes of wireless, have been followed by a long line of men who have rapped out the call for help until their ships went down.

One of the bravest radio men in recent years was the operator of the Norwegian tramp steamer GRONTOFT, which foundered with all hands in an Atlantic gale just as help was nearing her. He sent the S O S and details of the ship's position, adding a few words of his own:

“God pity the boys at sea on such a night as this. The old man thinks it might breeze up by night. Well, the steward is making sandwiches for the lifeboats; it looks as though we're going to have a picnic.”

Half an hour later came the words: “The old wagon has a list like a run-down heel. This is no weather to be out in without an umbrella.”

Standing By to the End

The next message was from the captain of the doomed ship. “We are sinking stern first,” it read. “The boats are smashed. Can't hold out any longer.” To this the hero at the Morse key added this farewell:

“The skipper dictated that, and he ought to know. Where did I put my hat? Sorry we could not wait for you, pressing business elsewhere. Good-bye.”

Then, with a groan and a blast of steam the GRONTOFT slid stern first to death, 700 miles from Cape Race.

Robert L. Hague, for some time vice president and general manager of the Standard Shipping Co., has been elected to the presidency of that company succeeding E. M. Clark, who retired on July 1. A sketch of the career of Mr. Hague appeared in MARINE REVIEW for last February.

Better Feeling in Foreign Shipping

Some Improvement is Anticipated

By Frank C. Bowen

THE revival is a long time coming, and there have been many false dawns, but it is undoubtedly a fact that a spirit of subdued optimism is still noticeable in European shipping circles despite definite figures which give little enough encouragement for any such feeling. While few people believe that the revival will be immediate, the general tendency is still to take a rather brighter view of things.

It is fully realized that a further reduction in costs is necessary. As far as the actual running of the ships is concerned they appear to have reached rock bottom, with cuts in salaries and innumerable fuel economies obtained by improved machinery. But there are many incidental expenses connected with shipping which are still far too high and attempts are being made to bring these down to a more reasonable level.

Port and Canal Charges

The various port charges make one item and the dues charged by the Suez canal authorities have recently been the subject of a good deal of attention. They have, in fact, been bitterly attacked in various circles, particularly by Sir Arnold Wilson, a retired Indian administrator who has produced some very damning figures and facts, particularly the number of ships, especially tankers, which have been diverted round the Cape and the proportion of the value of many cargoes eaten up by the dues.

On the Atlantic the North German Lloyd BREMEN and EUROPA are still breaking their own records until one cannot help wondering how much they still have in hand and in this it is worth noting that no designed speed has ever been officially published for these two ships. They are getting the cream of the passenger business.

Work on the Compagnie Generale Transatlantique NORMANDIE has been reduced. This has caused indignation in France, particularly in the St. Nazaire district, and as the state has great influence on the company through its help it is more than possible that political pressure may be brought to bear to speed matters up.

*This is a quarterly review of the shipping abroad, appearing regularly in MARINE REVIEW. The first two articles for this year appeared respectively in the February and May issues. The fourth article will appear in the November issue.

The existence of the North Atlantic conference has been in peril through disputes over the classification of first and cabin class ships, a classification which shows glaring inconsistencies whose rectification is obviously essential if the conference is to live up to its aims. But it is acknowledged that there has been great difficulty in finding a satisfactory compromise, which shows the necessity of such a conference arranging beforehand to have the necessary machinery to make adjustments when a new type is introduced. The last few years have seen a revolutionary change in Atlantic travel owing to the introduction of the super cabin liner and the conference was not ready to make the necessary adjustments.

While the regular passenger trade shows poor results the British companies are busier than ever with yachting cruises this season and the great majority of them are booked to capacity. Both passengers and companies are finding their level, with the result that there is far more satisfaction and a revival in the more expensive first class cruises which seemed to be threatened by the popularity of the cabin and tourist classes. This year's business is certain to be more profitable, for expensive mistakes made when the business was expanded so rapidly are being avoided, but there is still an urgent need for agreement among the owners to avoid unnecessary competition, uncovered fields and dates which clash to the advantage of nobody. The owners have already held discussions on this subject and the foundations have been laid for a "conference of cruising yachts."

The 20-Knot Cargo Ship

European shipowners, especially those on the continent, continue to show their interest in fast cargo liners. When he was building 13½ and 14-knot ships Wilhelm Wilhelmsen, the Oslo owner, said frankly that he had been forced into this speed by competition, but that he regarded it as unsound from the economical point of view. Yet his latest motorship the TRICOLOUR made over 18 knots on trial and is designed to be the fastest ship in the Australian "wool derby."

There seems to be very little doubt that we will soon be seeing the 20-knot cargo liner and no doubt she will have the feature that is conspicuous

in several of the newer ships of this type, quite luxurious accommodation for a limited number of passengers. The question is whether the British lines will not be forced into this policy by continental competition, although they have shown little taste for it up to now. The board of trade regulations limit British ships to 12 passengers unless they take out a full license with all its expense and disadvantages, and as most of the cargo liners are owned by interests which also run passenger ships, or are linked in some way to the passenger lines, there has hitherto been no desire to push forward this side of the business, although it has obvious possibilities. The cargo liner spending a few days at each port is much more convenient to the overseas commercial traveler, for instance, than the mail ship which forces him to wait for the next sailing unless his business can be finished in a few hours.

Furness Withy Expands Service

In the British cargo liner world the most interesting event during the quarter has been the entry of the Furness Withy group into the Australian and New Zealand trade, one of the only areas hitherto left uncovered. It was effected by the purchase of unissued shares in the Shaw Savill & Albion line, Lord Essenden taking a big part in the affairs of the company, and the great point now is the extent to which the company's trade will be developed under the encouragement of the Ottawa agreement.

In the case of the Blue Star line it is different, for that concern finds that the Argentine meat trade on which it principally depended has been hard hit by the Ottawa pact.

The budget presented at the end of the financial year contained a shock for the British coasting business. The steam coaster has been developed to what appears to be the limit of the type, but under postwar conditions it has been severely handicapped in competition with the smart little Dutch diesel engined coasters which have made a regular practice of bringing cargoes of bricks across the North sea and then accepting several British coasting charters before they return to their own country.

This competition could only be met by the development of the British diesel coaster and this has been done

Trend of Trade and Shipping in British Isles

	March	April	May	Five months ended 1933	May 31, 1932
Total entrances of cargo ships into British ports:					
Number of vessels	3,599	3,447	4,288	17,719	19,538
Tons	4,763,685	4,639,287	5,235,658	23,073,110	23,360,747
Tonnage from Atlantic coast of North America	800,795 (14.8%)	811,213 (17.5%)	976,668 (18.5%)	3,946,249 (17.1%)	4,002,726 (17.1%)
Total clearances from British ports:					
Number of vessels	4,106	3,615	4,221	19,585	21,097
Tons	4,431,936	4,204,670	4,784,970	21,902,214	22,321,196
Tonnage going to Atlantic coast of North America....	651,678 (14.7%)	821,408 (19.5%)	966,453 (20.2%)	3,666,581 (16.8%)	3,416,989 (15.3%)
Total value of goods:					
Exported	£36,533,741	£29,932,755	£34,585,451	£166,818,220	£182,465,016
Imported	£56,346,447	£51,151,398	£57,294,838	£267,099,751	£302,964,964
Exports of coal:					
Tons	3,296,238	2,753,352	3,670,455	15,862,341	16,392,798
Value	£56,346,447	£51,151,398	£57,294,838	£267,099,751	£302,964,964
Tonnage shipped for use of steamers	1,146,935	992,416	1,101,006	5,450,993	6,033,241

with remarkable success. But the budget proposal to put a customs duty of nearly 50 per cent on fuel oil meant a definite setback, for the Dutch could evade it on their overseas business. As a result several orders for new motor coasters were cancelled until the treasury thought better of the matter and withdrew the suggestion.

The carefully thought-out scheme of the chamber of shipping to rationalize the available tonnage by a co-operative laying-up agreement has failed; headed by the Liverpool Shipowners' association there was great opposition on the ground that the scheme was impracticable so that it has been withdrawn, although not abandoned.

Subsidies Under Discussion

Subsidies are still the subject of great discussion in British shipping circles, for British owners are fighting state aid to practically every flag with which they have to compete for world trade. The general principle of subsidies is recognized by the shipping world to be vicious and most owners desire to avoid it if possible, but more and more are expressing their doubts as to whether it will be possible to do so much longer. The alternative to a definite state aid to shipping is a return to the navigation acts which were repealed in 1849, which would reserve all imperial trade to ships of the British flag. Although this again is against the shipowners' general policy there is a growing body of opinion in

favor of its trial at least and considerable political pressure is being brought to bear.

In France also there is a strong agitation for a return to the complete subsidy policy, the present system of state aid being scrappy although it is undoubtedly effective in the trades and companies selected for help.

Poland is the latest country to talk about a big state mercantile marine. The country already possesses a line across the North sea and a transatlantic service with the former Russian-American ships taken over from the East Asiatic Co. These ships were designed primarily for emigrants, of whom there are now very few, so that the department concerned is talking about aiming at the transatlantic tourist trade and plans one or more 20,000-ton 20-knot diesel ships.

The case of the insurance of the burnt out Compagnie Sud Atlantique liner L'ATLANTIQUE is still dragging on its weary length which, considering the huge value of French marine insurances on the London market, is unfortunate, particularly as the arguments have been bitter. There is no doubt that the French authorities are largely to blame through their policy of maintaining secrecy with regard to the official inquiries into former fires, particularly in the case of the Messageries Martimes GEORGES PHILIPPAR. If this policy of secrecy was intended to quiet the fears of passengers and others it had just the opposite effect, for

there was a natural suspicion that a lot was being concealed and that somebody was being whitewashed. As there are large sums of British money at stake over the insurance of L'ATLANTIQUE and other ships this feeling has naturally produced the most unhappy results.

British Shipbuilding Improves

There has been a slight revival of British shipbuilding, for although there have not been many new orders, the few that have been placed are quite good ones and there have been many inquiries. The Shaw Savill & Albion and the Commonwealth & Dominion line are both building new cargo motorships, while the New Zealand Shipping Co. is inviting tenders for two 17,000-ton diesel-engined passenger and cargo liners similar to those that they now have on service. A good deal of business has been done in the modernization of existing ships, the fitting of superheaters, etc., in tramps, while the Ellerman lines have placed contracts for the installation of exhaust turbo-electric gear in a number of their ships.

The Royal Mail lines, successors to the Royal Mail Steam Packet Co., have decided that the big motorships ASTURIAS and ALCANTRA are not suitable with their present speed to compete with the Italian and German ships and have therefore decided to substitute geared turbines and high-

(Continued on Page 37)

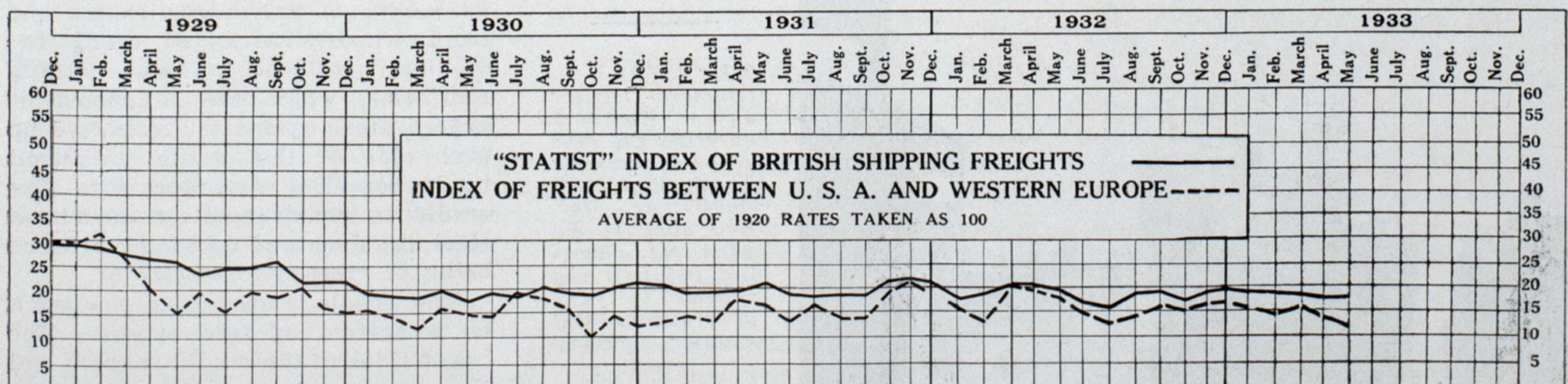


Diagram showing fluctuations of ocean freight rates for four years and five months

Railway Dry Dock Installed At Boulogne-Sur-Mer

BOULOGNE-SUR-MER is the principal fishing port of France and an important port of call. It is the home port of over 130 steam and motor trawlers, and well over 150 smaller fishing craft, hand liners, and drifters. These require dry docking facilities for cleaning, painting, and repairs. For some time these facilities comprised a 1200-ton floating dock built in 1912, a 1000-ton English-type slipway built in 1903, and three grids for grounding at low tide.

Due to the size and demands of the fleet these facilities were found to be insufficient, so that the Fishing Owners' association and the chamber of commerce urged the government to provide additional dry docking equipment. After considerable study and investigation of proposals submitted by several concerns, the government engineers and the department of public works decided to construct a railway dry dock of 1500 metric tons capacity (1525 tons of 2240 pounds each in English measure). This has recently been completed and put in operation.

Relatively Unknown in Europe

Although in use in America for over 80 years, the railway dry dock is relatively unknown in Europe. This is the first one constructed in France, though four have been in operation in the French colony of St. Pierre, Miquelon, for over 30 years.

The railway dry dock installed at Boulogne-sur-Mer, consists of a steel cradle moving along an inclined track operated by chains and an electric hauling machine. The tracks are of the two-way type, laid down along the surface of a cylinder of appropriate radius of curvature, and are 180 meters (590 feet) long. The section above low water is of

reinforced concrete supported by concrete piles, while the submerged portion is of azobe (a nondecaying and worm-proofed wood from the Cameroons, about three times as strong as white oak) supported by piles of greenheart. The concrete piles were driven with a 5-ton steam hammer about 20 feet into compact sand and gravel for a safe load of 40 tons, and the greenheart piles were driven with a 1½-ton drop hammer about 15 feet into the same material for a safe load of 25 tons.

The greenheart piles were cut off under water along the line of proper curvature. Meanwhile, the track of azobe was constructed as a unit ashore and, when ready, was floated over the piles, sunk into place, carefully aligned, and then fastened by the diver. This method eliminated the necessity and expense of a cofferdam. It required exceedingly careful work and close supervision to assure accurate location of the tracks to the proper curvature and to line, within the small tolerance allowable.

The cradle is 85 meters (280 feet) long over keel blocks and 15.5 meters (51 feet) wide. The tidal

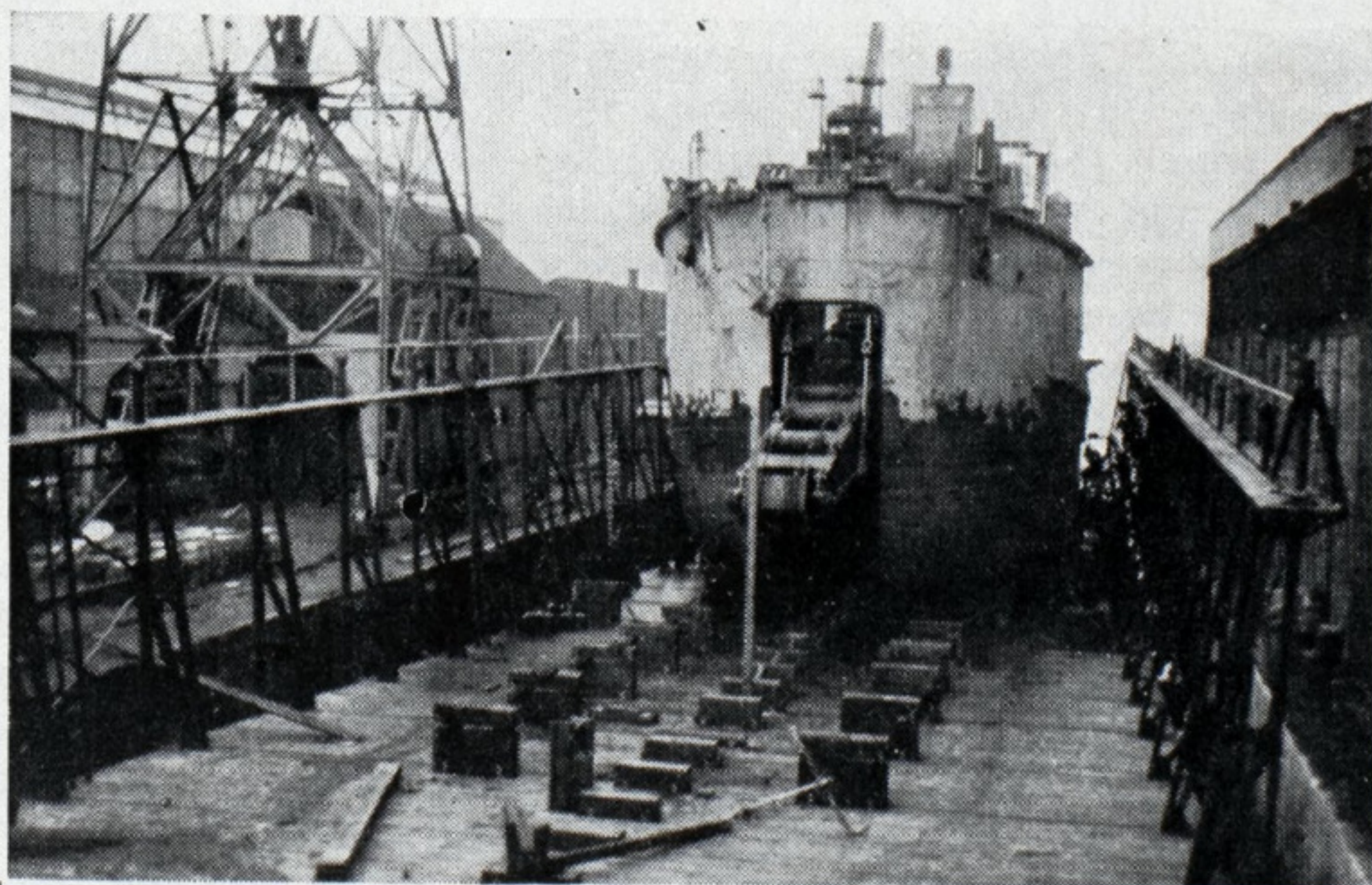
range at Boulogne being as much as 30 feet, with a variation to 10 feet between spring and neap high tides, it was important to have the deck of the cradle clear of water at practically all times so as not to interfere with any work, and at the same time to provide sufficient depth of water over the keel blocks for dry docking at neap tides. To do this in the limited length available, the slope of the line of keel blocks was established quite independent of that of the tracks and the radius of the latter so chosen, that when the cradle is in the outer position, the slope of the line of keel blocks approximates the usual trim of trawlers, giving a depth over the keel blocks of 1.7 meters (5.6 feet) forward and 6.5 (21.5 feet) aft, and, that when the cradle is in the upper position, the deck is above the usual level of spring tides.

The cradle is decked over its entire width for the full length to provide a convenient working platform, which at the after end extends 6 meters (19.6 feet) beyond the keel blocks to facilitate repairs to propellers and rudders. It is divided into two sections, the upper one 35 meters (115 feet) and the lower one 50 meters (165 feet) long, arranged so that a vessel may be dry docked on the upper one and the lower operated independently.

Cradle of Structural Steel

There are 18 sliding bilge blocks on each side of the cradle, operated

Dredge Bessure de Baas of 1600 tons on the new 1500-ton railway dry dock at Boulogne-sur-Mer, France. This dry dock was designed and constructed in the United States by the Crandall Engineering Co.



The French trawler-freezer Jean Hamonet entering the new 1500-ton railway dry dock at Boulogne-sur-Mer. Dry dock to be used for cleaning, painting and repairs to fleet of trawlers and smaller fishing craft

by means of galvanized chains and hand winches arranged along the docking platforms. These docking platforms, which are supported by braced steel uprights, are placed on each side of the cradle to permit ready centering and docking. The cradle is constructed of structural steel, the deck and docking platforms being of creosoted Douglas fir.

The cradle moves over the track on a system of free rollers. The lower sides of the cradle runners and the upper sides of the track are

(Continued on Page 40)

Progress in Transportation by Water

During the Past One Hundred Years

By J. Howland Gardner*

THE frontiers of civilization are limited by transportation facilities. The original thirteen states consisted of a strip along the Atlantic seaboard, and this strip was a measure of the limited transportation facilities. The Atlantic ocean with its bays and inlets along the shore and a few navigable rivers to the interior, afforded comparatively quick and dependable communication.

In 1807 Fulton's CLERMONT made her first trip to Albany. Fifteen years later there were over 200 steamboats operating on the Ohio and Mississippi rivers and our frontiers had moved inland to these limits.

Let us now turn back a century, to the year 1833. A few small paddle steamers are doing their best to speed up the carriage of freight and passengers on inland waters. On the sea the United States is beginning to show the world her superiority in ship construction and seamanship. The war of 1812 saw us wrest from England the proud title of "mistress of the seas."

Clipper Ship Era Begins

We are on the threshold of a "century of progress" that is to eclipse all previous time, it is the dawn of the American clipper ship era. In January 1845 Smith and Dimon launched the RAINBOW designed by John Willis Griffiths. This ship was such a radical departure from all other vessels that most people predicted she would be a failure. The nation little realized that it was the birth of the first Yankee clipper—destined to revolutionize naval architecture and to carry our flag to the farthest corners of the earth. The RAINBOW's first voyage netted her owners 200 per cent over her original cost. She was acknowledged by all the fastest vessel afloat.

Griffiths next designed the SEA WITCH. This vessel sailed from New York Dec. 23, 1846, the tallest ship afloat. One hundred and four days to China, and back in 81, the next year in 78 and again in 77—the latter an unbeaten sailing record for this run even today. Griffiths' designs were

adopted by the great merchants of Boston, Philadelphia and Baltimore, and copied by England and other maritime nations.

On the discovery of gold in California the Yankee clipper came into its own. Fast American clipper ships loaded under charter from the Far East to England at \$40 per ton of 40 cubic feet, with a bonus of from \$4 to \$6 a ton additional, while the slower English ships were glad to get \$13 to \$14 per ton of 50 cubic feet. The running time to San Francisco was from six to over seven months. The famous clipper SEA WITCH clipped the time to 97 days.

The most famous disciple of Griffiths was Donald McKay whose shipyard in East Boston turned out many of our famous clippers. In 1853 McKay designed and built the LIGHTNING, the first larger vessel built in this country for an English house. She was 243 feet long by 44 feet wide with a depth of 23 feet. On Mar. 1, 1854 she logged better than 18 knots and covered 436 nautical miles in 24 hours, a record never equalled before or since by any sailing ship, and not surpassed by an ocean going steamer for some thirty years. In August 1851, McKay's FLYING CLOUD, hung up a record of 89 days, New York to the Golden gate around Cape Horn, and this is still unbeaten but duplicated by this same ship, and in 1860 equalled by the clipper ANDREW JACKSON.

In 1846 we had less than a million tons engaged in foreign commerce. Our tonnage continued to increase up to the Civil war, at which time our deep water tonnage was over 2,600,000 tons, and we were carrying 70 per cent of our exports and 65 per cent of our imports. Then came the Civil war. Once more England, ever watchful, seized the opportunity to establish her commercial supremacy.

Development of the Steamship

One hundred and one years ago the first steam vessel arrived in Chicago carrying supplies for the Black Hawk war. In 1833, eleven steamboats operated on the Great Lakes. The change from side wheelers to propellers began about ten years later and by 1860 there were 118 vessels of this type, averaging less than 500 tons each.

During the Civil war a new type of ship was developed on the Great Lakes from which came the ore carrier of

today. Here we also find the largest side wheel steamer in the world, the GREATER DETROIT, designed by Frank Kirby in 1923 with a speed of 20 statute miles per hour and accommodations for over 1500 passengers.

Inland waters saw the birth of steam navigation. The Long Island sound steamers were among the leaders in this advance. The Fall River line steamer PILGRIM, designed by the late George Pierce, an iron hull fitted with a sidewheel beam engine, was the first vessel built in this country with a double bottom; the first to use electric lights as the sole source of illumination; and the first to be fitted throughout with automatic fire alarms. The CITY OF FALL RIVER had the first compound beam engine. This engine was designed by the late Stevenson Taylor of the W. & A. Fletcher Co. The PLYMOUTH, of the same line, built in 1890, was the first triple expansion inclined paddle engine, the first fitted with fire bulkheads and the first completely protected by automatic sprinklers.

The GOVERNOR COBB of the Eastern Steamship Co., built in 1906 was the first turbine drive steamer in this country. On the Mississippi and Ohio rivers there has been marked development in shallow draft steamers.

Early Government Shipping Aids

Some 12 years after Fulton's CLERMONT started making her trip up the Hudson, the SAVANNAH, the first steamship to navigate deep water, crossed from Savanna, Ga., to England. It was not until 1838 that capital could be persuaded to embark on such an adventure. In 1839 the Cunard company was granted a subsidy of \$425,000 a year to establish fortnightly sailings to Quebec, Halifax and Boston. The service began with four wooden side wheel steamers of moderate size with sails as well as steam power. The Collins line, operating a semi-monthly service between New York and Liverpool, was established in 1847, with a mail pay grant of \$385,000 a year. The steamship ATLANTIC of wood construction, of 2845 tons was 280 feet long and had 800 horsepower engines operating at a pressure of 16.9 pounds giving her an average speed of a trifle over 13 knots. The OHIO was one of four early iron steamers built at Cramps at Philadelphia in 1873 and in 1874, like the ATLANTIC she had aux-

*Full abstract of paper presented by J. Howland Gardner, president of the Society of Naval Architects and Marine Engineers, at the annual convention of the American Society of Civil Engineers, Palmer House, Chicago, June 29, 1933.

iliary sail power. She was of 3100 gross tons, 343 feet long by 43 feet wide, 11½ feet depth of hold and had a speed of 11½ knots.

The American line took over the British built NEW YORK and PARIS of the Inman line, transferring them to United States registry under the ocean mail act of 1891. In accordance with this arrangement the ST. LOUIS and ST. PAUL were built at Cramps in 1894 and 1895. They were outstanding ships for their day, of 11,600 tons and fitted with twin screw reciprocating engines. They were 554 feet long and 65 feet in beam.

Modern American Vessels

The MANHATTAN and WASHINGTON, largest and finest merchant vessels ever built in this country, have recently been placed in commission in the North Atlantic service between New York and European ports. They were designed and built by the New York Shipbuilding Co. for the United States lines, and are 705 feet long and have a gross tonnage exceeding 24,000. Their twin screw geared turbines develop 30,000 horsepower, and operate with a steam pressure of 390 pounds per square inch and 200 degrees superheat.

These vessels are among the 42 modern seagoing ships that have been built under the act of 1928. The three twin screw geared turbine Matson line vessels built at Fore River by the Bethlehem Shipbuilding Corp. Ltd., for operation in the Pacific and the two turbine electric drive Dollar liners built by the Newport News Shipbuilding Dry Dock Co., for the around the world service are typical of modern American vessels. These 42 vessels are, ship for ship, equal in operating efficiency and safety to those constructed anywhere in the world. They constitute a substantial nucleus for an American merchant marine in foreign trade and as naval auxiliaries.

This year marks the twenty-fifth anniversary of turbine electric propulsion in marine practice. The fireboats GRAEME STEWART and JOSEPH MEDILL, built for the city of Chicago in 1908, were the first vessels in the world to be equipped with turbine electric drive and they are still in service. Turbine electric drive has been installed in 66 vessels aggregating over 1,000,000 shaft horsepower.

Diesel engines hold a prominent part in world ship construction. Based on the tonnage of ships built in the United States, however, the progress has not been so rapid. There are at the present time only 84 American seagoing vessels above 2000 gross tons in which this form of propulsion is used.

Welding as applied to ship construction has been gradually on the increase and is beginning to fill a long felt want in this field of construction.

Development of reciprocating ma-

chinery with cylindrical boilers reached its height about 1900 to 1905. About this time four great factors entered the marine field. First, the watertube boiler gave a more efficient method of heat transmission and made possible higher steam pressures. Second, the improved turbine drive as developed by Sir Charles Parsons and Charles G. Curtis, was destined to be a milestone in the progress of marine engineering. Third, was the work of our navy in what might be called rudimentary experiments in the combustion of liquid fuel. Fourth, the increasing use of superheated steam.

In the last century we have seen the horsepower of a single vessel grow from 625 to 200,000 and fuel consumption fall from 10 pounds of coal per horsepower per hour to as low as 0.6 pound of oil per horsepower per hour with increase in speed from 6 to 40 knots.

Shipbuilding and Naval Architecture

With the advent of steam propulsion and the consequent more certain and definite speed and performance of the power driven ships, ship design took on a new aspect. The old uncertain methods were gradually replaced by logical and scientific efforts of trained scientists, and here the science of naval architecture had its birth.

Of the many factors entering into the design of a modern vessel, the determination of power and speed is perhaps the most important, and is certainly the one in which scientific methods have in the greatest degree replaced chance and guesswork. The determination of speed and power by means of small models, successfully initiated in England, by William Froude about 1870, has now been developed to a point where experimental model tanks are to be found in practically every maritime country, and the speed and power of proposed new vessels are determined by towed and self-propelled models with an accuracy undreamed of in the earlier days.

It is gratifying to Americans to know that some of the most outstanding and valuable contributions in this important division of naval architecture have come from Admiral David W. Taylor of our own navy; the designer and for many years the superintendent of the United States naval experimental model basin in Washington.

In the ships themselves, the most important development of the past 100 years has been the change from wooden hull, first to iron and later, about 1890, to steel. There has been a steady improvement in the structure of vessels, as well as in their internal arrangement, fittings and equipment. The riveted and consequently rigid edge and butt connections of the shell plating and decks of the iron ship gave an enormous advantage in structural

strength over the wooden hull. Possibilities of design and arrangement were widely expanded, and types of vessels, particularly suited for various services came to being; ships it would have been quite impossible to build of wood.

The maximum length of practicable wooden hulls is not much over 300 feet. With steel, the only limit on size, so far as strength of hull is concerned, is available depth of water and consequent limitations of draft and depth of hull. Notwithstanding draft limitations, the size and length of ships has steadily increased and to meet the requirements of a longer and relatively shallower ships, special steels of high tensile strength have, during the past few years come into general use in the construction of these large and high powered ships with the result that vessels over 1000 feet in length are now in the course of construction.

Scientific methods are now the rule in every branch of ship design and the qualities of the modern ship, their strength, stability, carrying capacity, engine efficiency, in fact all of the many varied properties which together determine her fitness for safe and successful operation are fixed by the naval architect and marine engineer with sureness and precision.

Merchant Ships and Sea Power

Captain Mahan, the great authority on the influence of sea power, has set up the equation that sea power is equal to the navy plus bases plus merchant marine. Let any one of the factors on the right hand side of this equation be reduced and there follows a reduction in sea power. This was beautifully illustrated in 1908. The great battle fleet of the United States was making a trip around the world, and yet so impotent was our merchant marine that we were obliged to depend on foreign flag ships to carry fuel to supply this fleet. A limitation of armament as it reduces the navy power must be followed by an increase on the importance of the merchant marine. If naval power with its bases is entirely eliminated the sea power of the country is measured by its merchant marine.

It is gratifying to know that the administration has inaugurated a naval rebuilding program which calls for the construction of 32 ships, at least 17 of which are to be built in private yards. While this will not bring our navy up to treaty strength, it is the first step in the right direction, and puts new life into shipbuilding and allied industries throughout the entire nation at a time when it is vitally important. About 85 per cent of the expenditures for naval vessels are for labor.

We should not forget our United States army engineers and what they
(Continued on Page 38)

Direct Drive Diesel Towboat, Turecamo Girls

THE towboat TURECAMO GIRLS, designed by Merritt Demarest, Totenville, N. Y., and built by the Bath Iron Works Corp., Bath Me., for the B. Turecamo Towing Corp., is the first which this company has built for the Turecamo corporation.

This tug is 93 feet overall length, 23 feet molded beam and 11 feet molded depth. She is built of steel of substantial scantlings, has bar keel, straight stem, overhanging stern, with bulwark inclined inward in usual manner. Her sides are protected by large round hollow steel fenders, one fitted all around vessel at line of main deck beams. Her main rail is a heavy bulb steel section, the only wood used being a heavy oak chock, or buffalo rail, fitted on top of steel rail to prevent chafing of hawsers.

Four transverse watertight bulkheads divide the main hull. Fuel oil is carried in two deep tanks which are part of vessel's structure. The stern frame is a steel casting, to which is bolted the fixed post of a Simplex streamline rudder. The main deckhouse is of steel, as are also all in-board divisional bulkheads and doors. The engine hatch skylight, captain's house and wheelhouse are of steel. The main deck of the tug and tops of all deckhouses are of steel.

Substantial towing bitts are fitted, forward, aft and on sides.

The crew is housed in deck house. There are no quarters under main deck. At the forward end there is a room for the cook with metal berth, mahogany wardrobe, seat with cushion and drawer under. Two deck hands are in a similar room forward. The galley and mess room are in one compartment full width of deckhouse, and equipped with an Enisha Webb & Son Co. oil burning range, General Electric Co. electric ice box, sink with hot and cold water, and monel metal lined dresser, with dish closet over. A mess table, seats, two side dressers with storage space under and a radio complete the furnishings in this room.

At after end of the deckhouse there is a room for two engineers and a room for two oilers, furnished and fitted in same manner as the cook's room. The engineers' room has in addition a wash bowl with hot and cold running water. All rooms have doors opening on to main deck and are fitted with airports. The engineers' room has a door opening in to engine room at upper grating level.

The middle part of the deckhouse forms light and air space for the engine room. The operating platform

for the main engine is at main deck level. A toilet with water closet and wash bowl is fitted in steel enclosure in the main deckhouse with door opening on to main deck.

Mahogany Faced Plywood

Inside of all rooms, including engine room, is sheathed with mahogany faced plywood on sides and overhead. All furniture and trim is of mahogany.

Engine room space in deckhouse has a large steel flat topped skylight with hinged transom lights. The wheelhouse and captain's room are in a house on top of main deckhouse.

The wheelhouse is higher than the top of the captain's room, which permits a view aft through transom windows in after end of wheelhouse. The front of wheelhouse is curved and has large windows, giving good vision for steersman. The inside of wheelhouse and overhead is sheathed

with mahogany faced plywood. The wheel house is equipped with gong and jingle pulls and sound return tube, for communication with engine room, a compensating compass, steering wheel and column for steering engine control, and whistle pull. Port and starboard doors of wheel house open on to a bridge extending to side of main deckhouse. Door in after end of wheel house leads to captain's room by descending to lower floor level.

The captain's room is sheathed on sides and overhead with mahogany and has mahogany built-in berth with drawers under and pullman berth over. A mahogany wardrobe, desk, seat, and wash bowl with hot and cold running water complete furnishings in this room. Door at aft end opens on main house deck.

The steel floors of all rooms are covered with Selbylith composition. Maroon colored rugs on floors, cushions on seats, and curtains at windows and ports give all quarters a comfortably furnished appearance.

While the hull of this vessel has been riveted, considerable electric welding has been utilized. The oil bulkheads are welded, also the stream line rudder, steel fenders to shell, seams of shell in way of oil tanks, base of bitts to steel deck, and all smaller fittings, rail stanchions and stack. Pneumercators are installed for measuring quantity of oil in fuel tanks.

Diesel Engine Main Propulsion

The tug is propelled by a Winton airless injection six cylinder, 600 horsepower at 250 revolutions per minute diesel engine fitted with a Kingsbury thrust bearing and drives vessel through shafting and a three bladed bronze propeller, of variable pitch, of Fletcher design. The propeller was made by the Staten Island N. Y. plant of United Dry Docks Inc.

A Winton diesel engine having two cylinders 5 inches by 7 inches stroke drives one 10 kilowatt Electro Dynamic Co. direct current generator and a 16 cubic feet two-stage, single

(Continued on Page 40)

Principal Characteristics

Name.....	Turecamo Girls
Type.....	Harbor, Bay, Sound Tug
Builder.....	Bath Iron Works Corp.
Owner.....	B. Turecamo Towing Corp.
Naval Architect.....	Brown & Demarest
Launched.....	May 6, 1933
Completed.....	May 12, 1933
Classification.....	Owner's Requirements
Length, overall, feet, inches.....	93-0
Length, load waterline, feet, inches.....	86-10
Beam, molded, feet, inches.....	23-0
Depth, molded, feet, inches.....	11-0
Draft, mean, feet, inches.....	8-11
Draft, maximum, feet, inches.....	10-1½
Displacement loaded, tons.....	258
Gross tonnage.....	148
Net tonnage.....	76
Bunker, diesel fuel oil, tons.....	49.1
Propelling machinery, single screw, 4 cycle, solid injection, 6 cylinder Winton diesel engine, 15½ inches by 22 inch stroke, 600 B.H.P. at 250 R.P.M. direct connected.	
Generator—One diesel drive, 10 k.w. @ 600 r.p.m.	
Speed, running free, knots.....	10.4



Single Screw Diesel Drive Tug, Turecamo Girls, Completed May 12

World Shipbuilding Declines, Orders Exceed Launchings

ACCORDING to Lloyd's Register of Shipping, at the quarter ended June 30 last, American shipyards were building less than one-half of one per cent of the total tonnage of merchant vessels of 100 tons gross and upwards being constructed throughout the world.

With only about 3000 gross tons of merchant ships now in hand, American yards have less than a tenth of the volume of production under way three months ago. At this time last year, the United States was building 162,203 gross tons.

The decline of 28,000 tons in American production during the last quarter compares with a gain of 35,000 tons for Great Britain and Ireland, and of 26,000 tons for Japan.

How the volume of merchant shipbuilding has compared during the last two quarters is shown in the following table of gross tonnage:

	June 30, '33	Mar. 31, '33
Great Britain and Ireland	287,502	252,401
United States	3,038	31,128
Other countries	441,955	457,415
World total	732,495	740,944

Of the present total of production, Great Britain and Ireland have nearly 40 per cent in hand, as compared with only about 29 per cent at the beginning of this year. At the latter time the proportion of world shipbuilding being done in the United States was about 8 per cent, as compared with its present four-tenths of one per cent.

New Orders Exceed Launchings

Orders for new construction on which work was begun during the quarter ended June 30 last, represented a considerably greater amount of tonnage than that launched during the same period. The total of new work begun, however, was 19,000 gross tons less than in the previous quarter, while the decrease in launchings was only about 13,000 tons. For Great Britain and Ireland, during the quarter just ended the new work was 40,000 gross tons in excess of the launchings for the period, while for all other countries, taken as a group, the launchings were only about 3000 tons less than the volume of new construction.

New Work

	Jun. 30, '33	Mar. 31, '33
Great Britain and Ireland	50,050	76,001
Other countries	70,145	63,793
World total	120,195	139,794

Launchings

	Jun. 30, '33	Mar. 31, '33
Great Britain and Ireland	10,093	12,732
Other countries	67,462	78,567
World total	77,555	91,299

A continuance of the decline in the construction of steam and motor tankers of 1000 gross tons each, and upwards, is shown for the quarter ended June 30, the chief decline being in Italy. Sweden showed a small decrease, and Great Britain and Ireland and Germany are reported to have the same volume of this type of tonnage under way as in the previous quarter. A gain was shown by the other countries, taken collectively. The status of tanker construction for the last two quarters is given as follows:

	Jun. 30, '33	Mar. 31, '33
Sweden	47,600	54,000
Great Britain and Ireland	30,026	30,026
Germany	24,800	24,800
Italy	21,726	34,152
Others	36,312	26,712
World total	160,464	169,690

Motor tankers continue to represent the great bulk of the tanker tonnage, aggregating 143,704 gross tons.

Gain in Motorship Construction

Nearly 100,000 gross tons more of motorships than of all other types of vessels combined are now being built. Again during the last quarter there was a gain in motorship construction, accompanied by a falling off in the tonnage of other types under way, with the result that, at present, nearly 57 per cent of all construction is of vessels to be equipped with internal combustion engines. Comparison for the last two quarters for all countries combined is given as follows:

	Jun. 30, '33	Mar. 31, '33
Motor vessels	414,997	410,153
Others types	317,498	330,791
World total	732,495	740,944

Although the trend to motor vessels is more pronounced in other maritime countries, Great Britain and Ireland are going in for this type of construction more markedly than they were, and 28 per cent of their present building program is devoted to motor ships, as compared to only 9 per cent at the beginning of this year. In the case of the other countries, taken as a group, 75 per cent of the tonnage now building is in motorships. Comparisons for the quarter ended June 30 last, are given:

	Gt. Britain & Ireland	Other Countries
Motor vessels	81,118	333,879
Other types	206,384	111,114
Total	287,502	444,993

Great Britain and Ireland, in fact, are now building more motorized ton-

nage than any other country, having, passed both Sweden and Italy, due to an increase of 22,000 tons in the volume of such construction. Japan, with an equal gain in the same period, is now the third largest producer of motor vessels, and on the heels of Sweden, which holds second position. Comparison in motorship construction for two quarters are:

	Jun. 30, '33	Mar. 31, '33
Great Britain and Ireland	81,118	58,981
Sweden	76,860	80,969
Japan	74,180	52,860
Germany	46,850	49,995
Holland	31,288	32,250
Spain	29,652	31,252
Italy	27,076	59,098
United States	503	503

Returns covering all types of marine engines being built or installed throughout the world, show gains in the aggregate power of oil engines and steam reciprocating engines, and a decline for steam turbines.

The aggregate indicated horsepower of oil engines advanced from 381,059 to 432,990 during the last quarter. For Great Britain and Ireland, the gain was from 35,225 to 62,884, while Japan's total climbed 38,830 to 73,200. Holland's figure rose from 80,434 to 87,038, and Sweden's from 48,400 to 65,675. Spain's total remained unchanged at 24,200, while that for the United States dropped from 5726 to 4876.

In the case of steam reciprocating engines, the total for all countries combined advanced from 90,433 indicated horsepower at the end of last March to 104,393 at the end of June. For Great Britain and Ireland, the gain was from 60,008 to 74,673.

For steam turbines, the aggregate decline for all countries together, during the June quarter, was from 412,745 to 355,877, shaft horsepower. For Great Britain and Ireland, the decrease was only from 188,200 to 187,660; but for France the drop was from 186,000 to 160,000, while for the other countries together it was from 38,545 to 8217.

Although Great Britain and Ireland retained the lead in volume of tonnage under way during the last quarter, followed again by France, there were shifts, as shown in the following table, in the relative production ranking of the other leading shipbuilding countries.

	Jun. 30, '33	Mar. 31, '33
Great Britain and Ireland	287,502	252,401
France	92,406	97,489
Japan	82,280	55,570
Sweden	78,832	82,332
Germany	49,855	52,565
Spain	33,512	33,612
Holland	31,723	32,450
Denmark	27,183	20,187
Italy	27,076	59,098
United States	3,038	31,128

Only two merchant vessels of 20,000 gross tons or above now being built throughout the world. Great Britain and Ireland, and France are now each constructing one.

Manager of Italian Line in U. S. and Canada

Aroldo Palanca who has arrived in New York to assume his new post as manager of the Italian line in the United States and Canada is being welcomed by many friends in shipping circles with whom he came in contact during the stirring and anxious days of the World war. He was then at the head of the Italian ministry of shipping in New York, and following the organization of the traffic executive committee of the Allies, was elected as the Italian delegate to that committee.

He began in January, 1918, the huge task of co-ordinating maritime service between the United States and Europe. In that position he came into close personal and professional contact with the leading shipping and maritime authorities and experts of the United States, and made a lasting impression upon them by reason of his ability, technical knowledge, resourcefulness and energy.

Mr. Palanca brings to his new post a lifetime of experience and successful operation in shipping matters. He has been identified continuously with the industry since his graduation with the degree of marine engineer, from the great Italian Naval school at Genoa. He was for a time connected with the Italian State Railway administration in the department of navigation.

At the conclusion of his war-time service in the United States, Mr. Palanca returned to Italy in January, 1920, and was employed by Navigazione Generale Italiana in an important position, and attended all of the international conferences of steamship lines. Later he was sent to Australia to organize a combined maritime service of the Navigazione Generale Italiana and Lloyd Sabaud, between Australia and Italy. When Lloyd Sabaud acquired interest in the Adriatic group, Mr. Palanca was sent by the company to Trieste, where he remained until his recent appointment to his present post in New York, where he has now taken up his duties.

New French Line Manager

Henri Moran de Lincays, general secretary of the line in Paris, has been appointed general manager of the French line in the United States and Canada, according to an announcement made in Paris by the board of directors.

Mr. de Lincays will have his headquarters in New York at 19 State street, and succeeds Jean Tillier, who has resigned to engage in business for himself. The new general manager is expected to arrive in New York early

in September. In the meantime, Jean L. Artur, assistant general manager, will direct the affairs of the French line in the United States and Canada. Mr. de Lincays was born in Nantes June 20, 1887, and has been with the French line for the past ten years.

Travel Increase Noted

HENRY HERBERMANN, president of the American Export Line, reports a decided increase in passenger traffic on the southern route from New York to Europe during the first six months of this year as compared with the same period of 1932.

Thirteen per cent more westbound traffic this year on passenger ships to



Aroldo Palanca
Appointed General Manager Italian Line

the Mediterranean than last year. Eastbound, the vessels have maintained the record of 1932.

Passenger traffic on the Export line is about 50 per cent ahead of last year, according to Mr. Herbermann. On a recent sailing of the steamship EXCALIBUR, all first class accommodations were occupied.

Capt. Anton Nilsson of the oil tanker GULFGEN, rescuer of the crew of the tanker CITIES SERVICE PETROL, died July 9 at Fort Lauderdale, Fla. His death is said to have been due primarily to exhaustion incurred during the rescue which took place July 7 off the North Carolina coast.

Together with the steamer TRIMOUNTAIN, the GULFGEN commanded by Captain Nilsson, removed to safety all the survivors of the CITIES SERVICE PETROL which sank after two explosions, with the exception of Capt. F. L. Sears who of his own volition went down with his ship. While supervising the rescue Captain Nilsson remained on the bridge for 36 consecutive hours.

Pitometer Log is Installed on S. S. Washington

The new cabin liner WASHINGTON of the United States lines is the only merchant ship on the Atlantic fitted with a pitometer log for accurately measuring speed and distance. This instrument, as tested on the WASHINGTON, has shown a remarkable degree of accuracy and dependability according to Capt. George Fried, master of the ship. While encountering many variations of wind and sea, the log indicated the true speed of the ship through the water at all times. The log distance reading from Ambrose to Daunt light vessels and return, after allowing for known ocean currents, was 5797.9 miles, against an actual chart distance of 5797 miles. Such accuracy has never been obtained before.

The new type of log has a rod extending about 2 feet below the keel of the ship. It has two openings at the end, one pointed forward and the other straight down, which neutralizes the effect of currents on the instrument when the ship is at standstill. When the ship is in motion there is increasing pressure on the forward hold, and this is carried through a pipe to a mercury manometer, or U tube, which in turn forces mercury up on one side and down on the other into a center tube which operates the gear and registers on a master speed dial on the bridge.

Several repeaters may be attached to the master dial, so that readings of the speed and distance traversed may be taken simultaneously, in the engine room, radio room, or any other part of the ship desired.

Rear Admiral B. F. Day Dies

Rear Admiral B. F. Day, U. S. N. retired, oldest officer on the navy list and the oldest graduate of the naval academy died recently at Buena Vista, Va., at the age of 92.

Born in Plymouth, O., Jan. 16, 1841, he was appointed to the Naval academy from Ohio in 1858. He served on a number of naval ships during the Civil war and was wounded in an engagement July 3, 1863. He served with the North Atlantic blockading squadron.

After a tour of duty on a number of naval ships he was detailed to the Boston navy yard for three years, and during 1892 and 1893 commanded the cruiser BOSTON, and later the U. S. S. BALTIMORE. In 1897 he was appointed a member of the naval examining board and served in that capacity until at his own request he retired from active duty after more than 40 years service.

Burial will be at Warren, O., in accordance with an expressed wish that he be buried there beside his wife and not in Arlington national cemetery.

Late Decisions in Maritime Law

Legal Tips for Shipowners and Officers

Specially Compiled for Marine Review

By Harry Bowne Skillman

Attorney at Law

THE seizure of the ELIZABETH S. and the search conducted pursuant thereto were held illegal in the opinion reported in 1 F. Supp. 458, for the reason that there was no probable cause to justify the boarding of the vessel by the coast guard for the purpose of discovering, if possible, a violation of the prohibition law. In the case reported in 2 F. Supp. 270, the court decided that such seizure, being illegal, may not form the basis of a valid forfeiture of the vessel for violation of the tariff act.

* * *

WHEN cargo is received in good condition and is delivered in bad order, a presumption of negligence arises, casting upon the carrier the burden of showing that the injury arose from an excepted cause. If the matter remains doubtful, the carrier is not excused, and this is true whether the doubt exists as to the nature of the injurious occurrence or the insufficiency of the cause assigned.—W. C. FRANZ, 2 F. Supp. 497.

* * *

IN MEASURING salvage service, the value of the boat saved must be determined, not by reproduction cost, but by market value; conceivably, reproduction cost might aid, but certainly the most direct means for making such determination is the market value.—F. I. ROBINSON, 2 F. Supp. 644.

* * *

WHILE one boat in a fleet may not be charged with a lien for supplies or towage furnished to another, each boat may be held liable for supplies or towage specifically rendered to it, even though under a contract providing for service to the fleet.—Transmarine Barge No. 100, 62 F. (2d) 252.

* * *

A LIGHTER must keep from under the overhang of a twin screw vessel, and is at fault for resulting damage if she swings under the counter and fouls the propeller. In the case of EAST INDIAN, 62 F. (2d) 242, it was held that a lighter swinging around under a motorship's overhang, because made fast to the motorship only by forward lines, was in a position of a drifting vessel, rendering the lighter presumptively at fault in fouling the motorship's propeller. It appearing that the lighter

drifted one and a half hours before fouling the propeller, the motorship failing to exercise reasonable diligence for her own protection could recover only half her damages from the lighter.

* * *

A CONSUL, passing upon an injured seaman's discharge, may refuse to discharge him, and invoke the ship's duty of cure and maintenance; but, if he does discharge the seaman, he is under a duty to care for him and must defray cost of maintenance and transportation.—American South African Line v. United States, 62 F. (2d) 254.

* * *

IF A BARGE is assured that a berth is safe, and acts upon that assurance, he need not sound bottom; if he is so assured, but does not accept the assurance, and sounds, but sounds ineffectively, the damages will be divided; if he has no assurance beyond the mere fact that he is given the berth, he must sound. No more is demanded of the bargee than he can learn with the simple means at his disposal, and he is not charged for failing to find stones, boulders or lumps in the berth.—Nassau Sand & Gravel Co. v. Red Star Towing & Transportation Co., 62 F. (2d) 356.

* * *

SHIPOWNER has a maritime lien for charter hire on cargo and freights where a lien is reserved initially in the original charter and has priority over rights subsequently created; this lien may be waived by inconsistent provisions, but is not waived if expressly reserved; it may be asserted to the extent of freights due to the charterer, except where the charterer has been paid in good faith without notice of the shipowner's rights.—Hall Corporation v. Cargo Ex Steamer Mont Louis, 62 F. (2d) 602.

* * *

A SHIPOWNER is not liable to an injured seaman in the absence of negligence on his part.—Brittingham v. Ore Steamship Corp. 62 F. (2d) 616.

* * *

SEAMAN is entitled to recover for maintenance and cure, in addition to wages, whether his injuries were due to negligence or accident. With respect to this right, the sea-

man is not obliged to volunteer to go to hospital for treatment, though he could not refuse to go if the offer of treatment there was made by his employer. A seaman, in order to recover, is not obliged to notify the owner of an obvious need of medical attention in order that the owner may provide it at a marine hospital.—Stevens v. R. O'Brien & Co., 62 F. (2d) 632.

* * *

OWNER of a scow, chartered by another, owes no duty, through its bargee, to surrounding shipping either to remove or secure the scow, lying in an exposed position when a storm was coming on. "The bargee," said the court in the case of Moran Towing & Transportation Co. v. Sunset Lighterage Corp., 62 F. (2d) 761, "was indeed their officers agent for many purposes, but not to forecast storms or determine whether a berth would become foul, if one came from a given quarter. Such men are not mariners, and their duties are limited to much humbler tasks, like sounding the bottom, making fast lines, letting go anchors, preventing overloading, and the like."

* * *

WHEN a man offers ship to carry goods at sea, the shipper may assume that she is fit for the service; though the owners do not expressly so agree, the law of the sea imposes the undertaking upon him; but if he is a private owner, he can rid himself of his obligation by stipulation in the charter party.—Societa Anonima Cantiero Olivo v. Federal Insurance Co., 62 F. (2d) 769.

* * *

FACT that individual stated in oath to procure registry of a vessel that a corporation was the sole owner did not keep him from having a right to sue a wrongdoer for damages for injury to it inflicted after he individually became the sole owner of it. The validity of his title to the vessel, it was held in Southern Bell Telephone & Telephone Co. v. Burke, 62 F. (2d) 1015, was not dependent upon the registry of it. The register is not the sole or exclusive evidence of the ownership of the vessel. Even if such individual were a mere bailee in possession when the vessel was wrongfully damaged, he had a right to sue therefor.

Marine Business Statistics Condensed

Record of Traffic at Principal American Ports for Past Year

New York

Month	(Exclusive of Domestic)		(Exclusive of Domestic)	
	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
June, 1933	249	1,482,801	264	1,580,337
May	255	1,573,337	244	1,513,231
April	232	1,330,774	232	1,311,863
March	243	1,466,812	264	1,536,778
February	237	1,373,856	236	1,380,867
January	254	1,416,857	245	1,383,630
December	244	1,307,332	253	1,387,341
November	227	1,154,961	232	1,175,988
October	253	1,379,283	244	1,328,561
September, 1932	258	1,634,448	266	1,658,521

Philadelphia

(Including Chester, Wilmington and the whole Philadelphia port district)				
Month	(Exclusive of Domestic)		(Exclusive of Domestic)	
	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
June, 1933	51	152,234	54	149,616
May	58	157,704	49	141,334
April	63	193,946	41	131,990
March	60	192,817	43	141,445
February	38	105,262	20	56,395
January	53	154,823	41	142,216
December	44	141,426	37	116,120
November	54	154,196	41	150,250
October	57	167,539	42	115,660
September, 1932	45	123,049	36	99,766

Boston

(Exclusive of Domestic)				
Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
	No. ships	Net tonnage	No. ships	Net tonnage
June, 1933	118	378,179	93	303,239
May	111	295,854	83	254,667
April	86	271,864	69	226,862
March	85	259,203	65	240,768
February	83	285,162	53	191,084
January	97	329,575	56	211,428
December	98	300,132	64	241,693
November	88	308,164	59	220,000
October	99	332,754	68	249,150
September, 1932	114	337,608	91	283,227

Portland, Me.

(Exclusive of Domestic)				
Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
	No. ships	Net tonnage	No. ships	Net tonnage
June, 1933	11	24,615	12	26,271
May	13	19,020	13	23,395
April	5	9,254	5	7,387
March	9	24,186	10	23,989
February	19	52,001	19	48,913
January	14	35,038	13	34,153
December	17	43,705	16	40,396
November	7	9,785	6	10,174
October	8	21,407	7	18,228
September, 1932	9	14,698	9	16,526

Providence

(Exclusive of Domestic)				
Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
	No. ships	Net tonnage	No. ships	Net tonnage
June, 1933	6	16,192	2	4,437
May	3	10,490	3	3,834
April	8	30,156	2	5,650
March	4	17,052	—	—
February	7	27,520	1	4,393
January	2	7,473	1	3,171
December	3	7,918	2	8,820
November	4	13,673	3	11,066
October	3	13,133	3	9,683
September, 1932	3	11,450	4	14,471

Portland, Oreg.

(Exclusive of Domestic)				
Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
	No. ships	Net tonnage	No. ships	Net tonnage
June, 1933	20	78,651	34	120,089
May	25	98,688	28	105,115
April	17	67,220	24	97,104
March	20	79,537	43	162,970
February	25	97,554	34	130,014
January	24	95,271	33	138,372
December	22	92,267	41	166,858
November	19	78,628	41	157,544
October	25	98,792	46	182,167
September	25	98,370	37	146,945
August, 1932	22	93,256	32	127,572

Baltimore

(Exclusive of Domestic)				
Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
	No. ships	Net tonnage	No. ships	Net tonnage
June, 1933	65	205,724	71	240,487
May	79	237,046	78	229,333
April	63	198,940	58	178,957
March	72	228,806	72	223,594
February	63	195,299	75	226,672
January	77	247,903	78	252,052
December	75	238,598	68	224,544
November	80	254,047	83	262,796
October	98	281,907	94	281,534
September	66	190,459	80	241,287
August, 1932	88	243,077	87	245,091

Norfolk and Newport News

(Exclusive of Domestic)				
Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
	No. ships	Net tonnage	No. ships	Net tonnage
June, 1933	16	30,163	31	60,544
May	18	33,521	32	68,941
April	14	39,010	36	100,485
March	18	56,097	42	111,038
February	16	49,213	36	82,544
January	20	58,470	33	76,493
December	28	77,286	38	92,621
November	20	54,678	35	79,516
October	15	60,775	36	80,792
September, 1932	26	74,483	53	118,437

Jacksonville

(Exclusive of Domestic)				
Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
	No. ships	Net tonnage	No. ships	Net tonnage
June, 1933	9	22,192	6	12,222
May	5	13,102	9	16,275
April	3	8,297	8	20,260
March	7	18,536	9	18,137
February	6	15,126	7	13,454
January	3	4,683	8	21,018
December	10	24,067	10	24,595
November	10	24,352	2	1,199
October	8	16,714	8	13,659
September, 1932	7	15,879	7	12,539

Key West

(Exclusive of Domestic)				
Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
	No. ships	Net tonnage	No. ships	Net tonnage
June, 1933	27	40,569	27	42,160
May	41	55,097	39	59,075
April	41	50,121	35	47,458
March	42	57,720	39	54,508
February	37	52,615	34	49,320
January	38	55,322	38	54,692
December	38	59,058	39	58,604
November	37	64,384	37	61,961
October	35	62,394	35	62,394
September, 1932	36	60,309	36	61,405

Mobile

(Exclusive of Domestic)				
Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
	No. ships	Net tonnage	No. ships	Net tonnage
June, 1933	97	206,147	91	183,736
May	95	210,743	105	231,000
April	105	209,469	109	235,429
March	96	234,328	91	206,064
February	80	184,669	83	200,850
January	100	232,451	91	201,671
December	86	204,295	92	209,061
November	94	210,195	97	234,590
October	105	228,041	105	233,510
September, 1932	89	166,896	96	193,213

Seattle

(Exclusive of Domestic)				
Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
	No. ships	Net tonnage	No. ships	Net tonnage
June, 1933	36	160,127	36	157,887
May	37	149,245	38	164,025
April	41	188,899	40	180,517
March	47	194,485	51	216,803
February	43	196,979	43	190,338
January	50	212,954	49	210,083
December	45	202,731	47	207,521
November	43	193,530	45	200,513
October	53	235,224	58	251,334
September, 1932	40	168,740	40	175,635

New Orleans

(Exclusive of Domestic)				
Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
	No. ships	Net tonnage	No. ships	Net tonnage
May, 1933	150	444,982	151	434,902
April	142	409,411	154	416,833
March	161	464,728	161	457,880
February	128	378,040	127	366,948
January	135	307,750	145	410,412
December	151	434,935	157	450,545
November	146	442,427	156	457,621
October	140	403,062	150	424,621
September	151	423,791	139	415,704
August	160	448,826	156	442,655
July, 1932	166	438,496	171	448,198

Charleston

(Exclusive of Domestic)				
Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
	No. ships	Net tonnage	No. ships	Net tonnage
June, 1933	32	84,362	28	75,023
May	21	53,125	20	49,888
April	19	49,280	20	52,449
March	35	99,612	29	83,243
February	24	65,228	24	65,218
January	28	83,545	23	65,063
December	24	58,943	24	63,086
November	33	93,457	30	85,072
October	14	33,693	12	34,625
September, 1932	21	54,638	20	52,035

Galveston

(Exclusive of Domestic)				
Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
	No. ships	Net tonnage	No. ships	Net tonnage
June, 1933	27	56,231	79	227,842
May	27	58,632	86	261,124
April	27	64,360	73	215,020
March	19	34,677	83	239,683
February	17	29,935	69	200,485
January	23	43,723	79	235,748
December	24	39,491	103	311,999
November	29	64,016	102	314,452
October	26	54,231	94	277,977
September	25	38,083	85	236,532
August, 1932	29	44,389	71	202,598

Los Angeles

(Exclusive of Domestic)				
Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
June, 1933	189	670,782	171	671,704
May	190	600,184	185	630,905
April	178	625,508	190	614,741
March	152	550,205	167	599,191
February	143	528,613	155	543,628
January	162	633,944	169	668,576
December	152	538,392	156	560,901
November	194	645,826	195	662,569
October	209	641,131	201	657,641
September, 1932....	223	581,402	222	610,443

Latest Data on New Marine Work

Information on New Ships Ordered—Building and Repair Contracts Let—Shipping Board Loans Made, Authorized or Pending

DUE to the success of the MANHATTAN and WASHINGTON, and in order to make weekly sailings possible the United States lines has decided to go ahead with a third vessel if the financing can be arranged. Since the building of such a ship for an established and essential service is a self-liquidating project, no difficulties are anticipated in making the necessary financial arrangements. As this is written there is nothing definite to report on the taking of bids for a third vessel, but it now looks favorable for action at an early date.

The new vessel will be somewhat larger and faster than the MANHATTAN and WASHINGTON. Though there would be some rather important changes in accommodations, in general, it may be said that the new vessel will possess all of the fine points of the first two with certain improvements and additions. The MANHATTAN and WASHINGTON each cost about \$10,500,000, and the contemplated third vessel will probably cost somewhat more than this.

To Install Refrigeration

Bids have been received by the Clyde-Mallory line and contracts have been awarded for the installation of refrigerating equipment of the most modern type on the vessels CHEROKEE and SEMINOLE, to permit the handling of precooled cargo such as fruit from Florida. The company has had a good deal of experience in the handling of Florida perishable products and this experience will be drawn upon in making these installations effective for the purpose intended. Each vessel will have a carrying capacity of from 32,000 to 33,000 standard boxes of citrus fruit. The contracts for the CHEROKEE and SEMINOLE were awarded to the Atlantic Basin Iron Works, Brooklyn, N. Y., at a bid of \$36,637 per vessel for the installation of the required insulation. Contracts for installing refrigerating machinery and the necessary air conditioning units were awarded to the York Ice Machinery Co., York, Pa., at \$25,300 per vessel.

Work on the CHEROKEE will start July 27 and is to be completed on Sept. 7. Work on the SEMINOLE is to start Sept. 9 and is to be completed Oct. 26. A third vessel, the ALGONQUIN, is to be treated in a similar manner, though contracts have not yet been

awarded. Each ship is also to have an additional 100-kilowatt generator to supply the necessary power.

Another important feature to make possible transportation of fruit in this manner is an elaborate precooling plant to be erected at Jacksonville, Fla., adjoining the Clyde-Mallory lines terminal. This plant, the largest of its kind in Florida, is to be equipped with refrigerating machinery of 600 tons and will have a cooling capacity for 36,000 standard boxes of citrus fruits each 24 hours. It is estimated that including the precooling plant at Jacksonville and the refitting of the three ships, a total expenditure of between \$450,000 and \$500,000 will be necessary.

Dry Dock for Houston

It has been reported that the Reconstruction Finance Corp. has granted a loan to the Todd Shipyards Corp. for financing a subsidiary company to construct and operate a ship repair and dry dock plant at Houston, Tex.

The project, it is understood, includes the installation of two floating dry docks, each with a capacity of 10,000 tons and one floating dry dock with a capacity of 5500 tons. A complete ship repair plant fully equipped with modern machinery will also be erected. No definite confirmation of the successful issue of this proposal has been received.

On July 12 the 12,000-ton tanker ROBERT F. HAND was launched at Kiel, Germany.

This vessel is being built for the German American Petroleum Co., a subsidiary of the Standard Shipping Co., New York.

Steel Barges Ordered

The Union Sand and Gravel Co., Huntington, W. Va., is reported to have placed a contract with the McClintic Marshall Corp., Pittsburgh, for building a fleet of six steel barges, 100 feet in length, 26 feet in beam and 6½ feet deep, with a capacity of 350 tons of sand or gravel.

The Texas Co. is said to have placed an order with the Leetsdale yard in the Pittsburgh district for two steel barges, each 110 feet long, 24 feet wide and 10 feet deep.

It is also understood that the Amer-

ican Bridge Co. has received an order for several barges for lower Mississippi service.

Seattle Yard Low Bidder

Bids were submitted on July 5 to the Northland Transportation Co., Seattle, for the construction of a steel passenger and freight motorship for service in southeastern Alaska. The lowest bid \$289,890 was submitted by the Berg Shipbuilding Co., Seattle. The contract had not been awarded as this is written. Bids were received from nine shipyards and were on the building of the hull only.

The Berg Shipbuilding Co. bid was \$65,577 less than the next lowest bidder. Other bids received were: General Engineering & Dry Dock Co., San Francisco, \$392,278; Lake Washington Shipyards, Seattle, \$355,467; Wallace Bridge & Structural Steel, Seattle, \$355,467; Moore Shipbuilding & Dry Dock Co., San Francisco, \$368,639; Winslow Marine Railway & Shipbuilding Co., Winslow, Wash., \$385,041; The Pusey & Jones Corp., \$445,000; Bethlehem Shipbuilding Corp., \$474,000; New York Shipbuilding Co., \$518,500. The completed vessel, it is expected, will cost approximately \$160,000 in addition to the figure of the successful shipyard for building the hull.

The new vessel will be 231 feet in length; 40 feet, 10 inches in beam; 23 feet in depth; and is to be propelled by two diesel engines each of 1000 horsepower.

Status of Giant Cunarder

It is now reported that work is likely to be resumed in the near future on the giant Cunard liner, No. 534, on the stocks at the shipyard of John Brown, Clydebank, Scotland.

Questions put to the chancellor of the exchequer recently in parliament brought out the information that negotiations toward the resumption of work were proceeding steadily and that the greatest difficulties had been overcome. Some details are still to be settled by the Cunard and White Star lines. When the conditions laid down by the government have been met, the matter of financial assistance will be assured.

It is expected that some definite word on the resumption of work on the new Cunarder will be given before the end of the present session of parliament, by Aug. 1.

Construction and Repairs Ordered and Planned

The Shepherd Steamship Co. engaged in the intercoastal lumber carrying business, is operating at maximum capacity in spite of the price increase in lumber. This company recently chartered the MUNTROPIC for a special sailing to the coast. The company is now looking around with the view of buying two ships similar to vessels of their fleet, that is, from 8600 to 9500 tons deadweight. No further information has been given out.

Though no confirmation is possible, it is rumored that the Federal Shipbuilding & Dry Dock Co. is considering the building of six combination cargo and passenger vessels for the United States Steel Corp.

The Standard Shipping Co., New York on July 18 received bids for extensive repairs to the tankers CANFIELD and DOHENY, but at the time no award had been made.

The Sun Shipbuilding & Dry Dock Co., Chester, Pa., has been awarded a contract by the Merchants and Miners Transportation Co. for reconditioning the S. S. LAKE FITCH and the S. S. LAKE FLORIS. The Sun yard was low bidder at \$154,900 and 45 days for each vessel. The Newport News Shipbuilding & Dry Dock Co. was the second low bidder with a figure of \$159,000 and 30 days for each vessel.

The eight-ship reconditioning program of the Lykes Bros. Steamship Co. is still in abeyance, but the firm of Gibbs & Cox, naval architects, New York, is expected to issue specifications in the near future.

Although plans and specifications for the Swayne & Hoyt-combination ship are practically completed, it is not expected that bids will be called for before Aug. 31.

To Recondition Liner

The PRESIDENT MADISON of the American Mail line, successfully raised after capsizing and sinking while under repair at Seattle, will be reconditioned for service. She will be stripped to the hull and the interior will be completely rebuilt. Machin-

ery will have to be removed and completely overhauled.

A bid of \$988,558 and a time of 190 days has been submitted by the Todd Drydocks Inc., Seattle. This is the lowest of a number of bids received from several shipyards on the West and East coast.

River Towboat Completed

Apparently the name HUCK FINN, originally intended for the sister towboat of the TOM SAWYER, has been discarded in order to honor the President. The new \$250,000 diesel towboat, built for the Inland Waterways Corp., by the Midland Barge Co., Midland, Pa., was christened the FRANKLIN D. ROOSEVELT on July 15 by Mrs. George H. Dern, wife of the secretary of war.

The new vessel is identical to the twin screw diesel river towboat TOM SAWYER, described in detail in the July MARINE REVIEW. After ceremonies on board, including an address by Secretary Dern, the FRANKLIN D. ROOSEVELT began her maiden voyage down the Ohio river to join the TOM SAWYER in the service of the Federal Barge Line on the Mississippi and Missouri.

General T. Q. Ashburn, chairman of the board of Inland Waterways Corp., accepted the vessel from John Schuyler Casey of New York, president of the Treadwell Construction Co. and its subsidiary, the Midland Barge Co., builder of the vessel.

Bids were taken on July 19 at the United States engineer office, St. Louis on parts for pumps and ladders for the dredges ST. GENEVIEVE and GRAFTON.

Bids were taken on July 15 by the United States engineer office, Memphis, Tenn., for leasing one or two dredges and dredge tenders in accordance with specifications submitted.

The United States engineer office at New Orleans will receive bids Aug. 10 for the construction, erection and installation of two river traffic signal light standards, complete with lights and appurtenances, on the Mississippi river in the port of New Orleans.

Bids for 21 Naval Vessels From Private Yards

As reported in the July issue private shipyards are to submit bids to the navy department on building a total of 21 warships. Sixteen of these are included in the 32 vessels, authorized in the national industrial recovery act, while one, a heavy cruiser, was authorized in 1929. Included are also four destroyers on which bids were originally to be opened on July 6. These destroyers are also outside of the program in the recovery act as they were authorized in 1916.

The vessels on which bids are to be received July 26 include: one heavy cruiser, of 10,000 tons displacement, with 8-inch guns; one light cruiser of 10,000 tons displacement with 6.1 inch guns; two aircraft carriers, of 20,000 tons displacement each; eight destroyers, of 1850 tons displacement each; and seven destroyers of 1500 tons each, and two submarines of 1400 tons displacement each.

Work Allocated Navy Yards

Announcement has been made that the construction of two submarines of 1300 tons displacement each have been allocated to the Portsmouth, N. H., navy yard, also, that one of the two 2000-ton gunboats is to be built at the Charleston, S. C. navy yard, and the other at the New York navy yard. This means that four of the 16 vessels in the program of 32 under the provisions of the recovery act have been placed in government yards leaving the disposition of 12 still to be determined, as far as navy yards are concerned.

It is expected that every effort will be made to expedite the placing of contracts in private yards after bids have been received on July 26.

On July 21 Henry L. Roosevelt on visiting the Boston navy yard said that the yard would be given the work of building two destroyers in addition to the two already allotted the yard. The assistant secretary is making an inspection of navy yards.

Bunker Prices

At New York		
Coal	Fuel oil	Diesel engine
Alongside	alongside	oil alongside
per ton	per barrel	per gallon
July 18, 1933...4.30@4.60	.90	4.32
June 18.....4.30@4.60	.80	4.08
May 18.....4.30@4.60	.80	4.08
Apr. 18.....4.30@4.60	.80	4.08
Mar. 18.....4.30@4.60	.80	4.08
Feb. 18.....4.30@4.60	.80	4.08
Jan. 17.....4.50@5.00	.80	4.08
Dec. 16.....4.50@4.75	.80	4.75
Nov. 18.....4.50@4.75	.80	4.08
Oct. 18.....4.50@5.00	.80	4.08
Sept. 18, 1932...4.50@5.00	.80	4.08

At Philadelphia		
Coal	Fuel oil	Diesel engine
trim in bunk	alongside	oil alongside
per ton	per barrel	per gallon
July 18, 1933...4.30@4.60	.90	4.28½
June 18.....4.30@4.60	.80	4.04
May 18.....4.30@4.60	.80	4.04
Apr. 18.....4.30@4.60	.80	4.04
Mar. 18.....4.30@4.60	.80	4.04
Feb. 18.....4.30@4.60	.80	4.04
Jan. 17.....4.50@5.00	.80	4.04
Dec. 16.....4.00@4.75	.80	4.04
Nov. 18.....4.00@4.75	.80	4.04
Oct. 18.....4.50@5.00	.80	4.04
Sept. 18, 1932...4.50@5.00	.80	4.04

Other Ports	
July 18, 1933	
Boston, coal, per ton..	\$7.17
Boston, oil, f. a. s. per barrel.....	\$0.78
Hampton Roads, coal, per ton, f.o.b. piers \$4.25 to \$4.50	
Cardiff, coal, per ton....	13s 9d
London, coal, per ton....	—s —d
Antwerp, coal, per ton....	17s 0d
Antwerp, Fuel oil, per ton67s	6d
Antwerp, Diesel oil, per ton.....	82s 6d
British ports, Fuel oil...87s	61
British ports, Diesel oil.102s	61

Construction Is Started on San Francisco Bridge

President Roosevelt on July 9 from Washington, by tapping a telegraph key started work on the great San Francisco-Oakland bay bridge—8¼ miles long. As he did so, the President said:

"I deem it a real honor to initiate the construction of the greatest bridge ever built and the largest construction job undertaken in the United States this year, the San Francisco-Oakland bay bridge.

"Financed jointly by the Reconstruction Finance Corp. and the state of California at a cost estimated at \$70,000,000, this great span will serve countless millions during the years to come.

"Even now it is serving a useful purpose as it brings additional employment to thousands of men who are getting the materials ready and to 6000 or 7000 men who will work directly on the job of construction.

"This huge undertaking which is to be followed by many others through the medium of the public works program, symbolizes the upturn that has come in our industrial life.

"I am glad to have a part in this historic ceremony."

Former President Hoover participated in the opening ceremony at San Francisco by placing a golden spade into the ground on Yerba Buena island in San Francisco bay. He said:

"This marks the physical beginning of the greatest bridge yet erected by the human race. But it is more than a bridge. It marks the consummation of that unity of effort for co-operation on the part of the citizens, the municipalities, the state and the federal government which is the genius of our countrymen."

Accidents to Vessels

In the July 1 bulletin of the bureau of navigation and steamboat inspection appears the following account of accidents to vessels under the jurisdiction of this service:

At about 8:15 p.m., May 28, 1933, while the freight steamer J. B. STETSON was proceeding from San Francisco to Long Beach, Calif., and the steamer CHEHALIS was on a voyage to San Francisco, the vessels collided at about 5 miles east of Point Arguello, doing considerable damage to the CHEHALIS. The case is being investigated.

While proceeding from Portage Ship canal to Fort William, Ont., May 27 at 6:30 p.m., the steamer GEORGE M. COX stranded on Rock of Ages, reef, Lake Superior. Passengers and crew, totaling 121 persons, were taken from the vessel in the lifeboats and landed at Rock of Ages lighthouse. No lives

were lost, but the vessel is a total loss, the value being estimated at \$125,000. Charges were preferred against the master, first officer, and pilot. The local inspectors at Marquette, Mich., found these officers guilty of reckless navigation and inattention to duties, and their licenses were revoked.

While on a voyage from Philadelphia to New York, May 29, the tug TRENTON sprang a leak, and the crew was unable to control the water. It grew so high that the fires were put out, and the vessel was beached head-on. The crew went ashore in the lifeboat and landed safely. The case was investigated by the local inspector in Philadelphia, but as there was no evidence of any negligence on the part of any licensed officers, the case was dismissed.

Ships in Collision

The liner CITY OF BALTIMORE, outward bound from Baltimore with 50 passengers aboard, on July 12 collided with the Standard Shipping Co. tanker BEACON in Chesapeake bay off Gibson island. No one was reported injured. The collision occurred in clear bright weather and was reported to have been due to a defective steering gear, causing the rudder to jam.

Both vessels were damaged. Dry dock examination of the CITY OF BALTIMORE showed a rupture of the shell below the waterline, 8 feet in length. There was also a 60-foot opening above the waterline. The bow of the tanker BEACON was also damaged. Both vessels went into dry dock at Baltimore for repairs.

French Mail Contracts

New York headquarters of the French line announce that the French chamber of deputies and the senate have voted long term mail contracts for the French line, the remuneration for which will vary between 50,000,000 and 150,000,000 francs per year according to the extent of the services rendered.

This definite settlement of the question of mail contracts guarantees the operation of the line's services with the present regularity of sailings and maintenance of standards. It is in effect a vote of confidence in the present management of the French line, headed by Marcel Olivier, now chairman of the board of the company, and Henry Cangardel, the line's managing director.

The Bakelite Corp., Bound Brook, N. J., has prepared a little booklet intended as an answer to the question "what is Bakelite?" This pamphlet sketches briefly the origin manufacture and applications of many types of Bakelite products. It is nontechnical in scope.

Request Bids for Cargo Ship for Swayne & Hoyt

Word from the Pacific coast indicates that bids are to be opened by Swayne & Hoyt, San Francisco, Aug. 31 for the construction of a 7500-ton deadweight passenger and cargo steamer. This vessel is to be used in the service of the Gulf-Pacific Mail line. Delivery will be made about Sept. 1, 1934.

In addition to general cargo service, the vessel is to be fitted with special refrigeration space for perishable cargo. Accommodations are also to be installed for twelve passengers. A speed of 13 knots is contemplated and the power required will be about 4000, probably in reduction geared turbines with single screw.

Reconditioning has already been carried out on two vessels, the POINT BRAVA and POINT ANCHA, stepping up their speed from 9 to 13½ knots. Cargo handling facilities on these vessels were also modernized.

Hoboken Terminal Leased

The shipping board at a meeting July 11 authorized the Merchant Fleet Corp. to accept the offer of Max Thaten to lease the government terminal property at Hoboken, N. J., in accordance with his revised bid providing for 50 per cent of the gross revenue and not less than \$90,000 per annum for the first year and \$100,000 for each succeeding year during the term of the lease which is 5 years.

The lessee may use the property for loading and discharging passengers and cargo and assembling outward and inward cargo in accordance with the usual commercial practices. The lessee may not unduly compete for general storage with privately owned and operated warehouses in Hoboken and vicinity, and all storage of the terminal property shall be subject to regulations and restrictions of the lessor.

The shipping board reserves the right to terminate the lease in the event of a national emergency.

United States department of commerce reports that an increase in subsidies for the Italian merchant marine during the fiscal year beginning July 1, 1933, has been authorized by the Italian government.

This would bring the entire subsidy for the coming year to a total of 331,246,000 lire which is an increase of 8,469,000 lire from the preceding year. Of the total amount of the subsidy shipowners will receive 260,035,000 lire which is an increase of 8,600,000 lire as compared with last year.

Equipment Used Afloat and Ashore

New Type Stream Line Flow Induction Ventilator—Lightweight Fittings—Emergency Generators—A New Molding Material

THE accompanying illustration shows a vertical section through a comparatively new streamlined marine cowl developed and patented, after building and testing many different styles, by the American Larson Ventilating Co., Pittsburgh, Pa. It has been successfully used on shipboard by several of the leading American shipbuilding companies. It is an induction ventilator and can be made in all standard sizes.

An object of the ventilator was to provide an induction cowl constructed with wall and a baffle element contoured to give maximum efficiency at low wind velocities. A further objective was to provide a slight restriction in the throat of the ventilator to increase efficiency and velocity of the induced air.

Investigation proved that in all styles built and tested by the company, including the "age old ship's cowl" there are one or more regions of turbulence in which no induction takes place and this turbulence robs the air of an appreciable amount of its kinetic energy.

Streamline Flow of Air

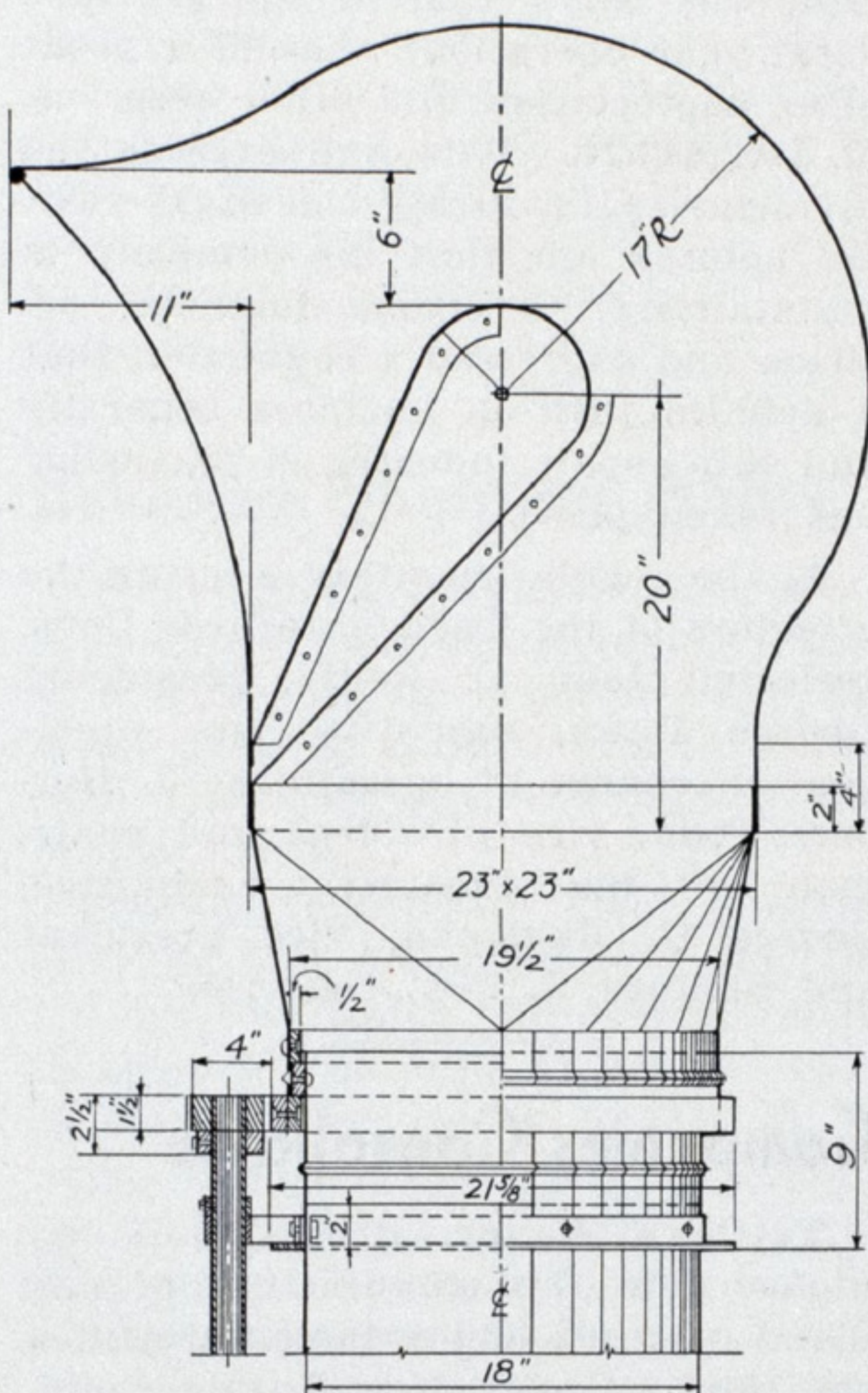
In this new streamlined marine cowl the roof and back plate is contoured to create a constraining surface for the inflowing air, which conforms to the natural streamline flow of air. The inlet opening is in a plane substantially horizontal and this inlet opening is relatively wide with respect to its depth.

This effectual opening lies between the slightly curved lip of the cowl and the ridge of the baffle plate and is bounded on the sides by the outwardly curved side portions. Although it is common to form the openings of ventilators flared, it has been found that the desired results are not accomplished unless the flared portion is formed in a curve continuous with the surfaces adjacent thereto, similar to the manner in which the roof plate curves smoothly from the lip. This curvature eliminates or greatly lessens the constriction and the turbulence adjacent to the opening.

It was also found to be important that the peak of the roof plate should lie approximately over the center line of the cowl as a whole. For the same reason the back plate is curved outwardly and vertically beyond the throat of the ventilator. By inclining the baffle plate from 60 to 80 degrees, from the horizontal, an increase in efficiency resulted and as far as it was possible to determine it prevents the entrance of

rain and snow.

Since it is obviously practical to form a cowl in its lower portion to seat over and around any circular ventilating duct leading into the vessel, it is also obvious that an inner member must be employed. The upper part of the inner member is square and the lower part is round. Experiments proved that this member of definitely determined dimensions increased the average discharge by 13 per cent over that obtained by using the largest cylinder



Marine cowl for shipboard use, designed for maximum efficiency

that could be installed in the cowl throat to serve the same purpose.

Test curves have been made showing that there are two distinct conditions of flow—one in which practically the full discharge coefficient is obtained as found by static pressure measurements, that is, with air flow to opening from all directions—the other in which uni-directional wind flow results in a different and lower coefficient, with entirely different flow conditions.

Lightweight Fittings

SMOOTH, strong, light-weight, steel fittings are now being manufactured by the Taylor Forge & Pipe Works, Chicago for use with light wall piping. These new fittings are fabricated from No. 10 gage

(.134") steel, by welding. They are die formed and present a smooth shipshape appearance and offer minimum resistance to flow.

The dimensions from center to end conform with the 125-pound American standard. They are furnished with plain ends or flanged, or flanged on one end only. Attached flanges are of forged steel of either the Taylor Forge standard or American standard diameter and drilling.

Compared with cast iron these fittings reduce weight by more than 50 per cent, cost less to erect and require lighter supports. They are suitable for hydraulic pressures of 200 pounds per square inch or more for smaller sizes. Fittings are tested to 50 per cent in excess of the working pressure for which they are ordered.

Emergency Generator Sets

EMERGENCY light and power for shipboard use is one of the important fields covered by the Kohler electric plant manufactured by the Kohler Co., Kohler, Wis. These sets independently driven by a gasoline type of engine are made in seven sizes beginning with 800 watts, 1 1/2, 2, 5, 10, 20 and 25 kilowatts.

On the S. S. QUIRIGUA of the United Fruit Co., one of these emergency plants furnishes current for auxiliary lighting system, radio telegraph, gyro-compass, searchlights, bilge pump, whistles and watertight door trip.

These plants are built in alternating current motors as well as direct current and in 220-volt as well as 110-volt. The current is taken directly from the generator.

A New Material Developed

A NEW product has been developed by Bakelite Corp., 247 Park avenue, New York. It offers interesting possibilities in many lines including the marine. It is called impact molding material because of its superior mechanical characteristics.

The new substance is tough with several times the shock resistance of ordinary molding material used for switchplates, pencils and similar articles. In many respects it is similar to the laminated products made by this company in the form of radio panels, table tops, etc. The difference, however, is that it can be molded and it is therefore adaptable to a wide range of shapes.

Shipping Board Calls for Fair Intercoastal Rates

For some time past the United States shipping board has been gravely concerned in relation to conditions in the intercoastal trade which threaten the disorganization of that trade. These conditions, it is reported, are due to the charging of rates by certain of the fifteen common carriers involved which are generally recognized as unfair for the service rendered.

It was stated at the shipping board's offices July 22 that the board contemplates suspension of rates on many of the commodities which are indicated to have brought about the threatened disorganization in the trade, and that all of the carriers have been warned to voluntarily place their rates in line with rates recognized as fair and reasonable. The taking by the board of this suspension action is viewed as necessary and appropriate in the interest of effecting the purpose and intent of the shipping act and the intercoastal act.

Steamship Owner's Code

No decision has so far been made by steamship owners with reference to the establishment of a fair practice code for the shipping industry. J. Caldwell Jenkins was appointed some time ago as head of a committee of 14 to consider the formulation of such a code.

Some progress has been made and as this is written the committee is soon expected to make its report. It will then be established whether the various parts of the shipping industry shall cooperate in preparing a comprehensive code of fair competition to cover the industry as a whole, or whether each section shall prepare its own code and deal directly with the federal administrator. Such action is expected in the near future.

Panama Canal Traffic

The *Panama Canal Record*, official publication of the Panama canal, heretofore published weekly, will henceforth, for reasons of economy, be published monthly effective with the beginning of the fiscal year 1934. The first monthly issue will be dated July 15, 1933, and issues are to appear on the 15th of each month thereafter.

From the *Panama Canal Record* of June 28, it is noted that commercial traffic through the canal during the month of May, 1933, showed an increase of 15 transits or 4.2 per cent, in comparison with May, 1932. Net tonnage (Panama canal measurement) and tons of cargo carried by the traffic during May showed decreases, however, in comparison with May, 1932,

of 73,709 tons, or 3.8 per cent and 46,808 tons, or 2.8 per cent respectively. In comparison with May, 1931, the number of transits in May, 1933, showed a decrease of 56 or 13.1 per cent; net tonnage (Panama canal measurement) a loss of 301,710 tons, or 13.8 per cent; and cargo tonnage a decrease of 295,470 tons, or 15.3 per cent.

The peak month of May since the opening of the canal occurred in 1929 when 524 vessels, aggregating 2,496,905 net tons (Panama canal measurement), and carrying 2,536,839 tons of cargo transited the canal.

Annual Meeting Held

At the recent annual meeting of the stockholders of the Todd Shipyards Corp., John D. Reilly, president, stated that while the volume of business was below that of the previous fiscal year operations showed a profit after depreciation and other reserves, of \$402,693.24. This well exceeds the dividends paid during the fiscal year. He pointed out that the company is maintaining its strong financial position and expressed a conviction that a definite turn in business generally and ship repair industry in particular has taken place.

At the regular monthly meeting the directors of the Todd Shipyards Corp. reelected John D. Reilly, president; George Dawe, executive vice president in charge of operations; J. Herbert Todd, vice president and chairman of the executive committee, George G. Raymond, vice president and Sanford S. Cox, treasurer.

Companies Consolidate

Tuttle & Bailey, Brooklyn, N. Y., pioneers in the manufacture of cast metal registers and ornamental grilles, and Hart & Cooley, New Britain, Conn., pioneers in wrought steel registers and grilles, have consolidated their manufacturing operations and sales forces. Several years ago the William Highton & Son Co., Nashua, N. H., was taken over by the Hart & Cooley Co. and the business centralized at New Britain, Conn.

William Highton & Sons, division of the Hart, Cooley, Highton Co., New Britain Conn., supplied considerable material to a number of the new passenger ships built during recent years. Material was supplied to such ships as the Matson liners MONTEREY and MARIPOSA, built at the Bethlehem Shipbuilding yard at Quincy, Mass., the S. S. PRESIDENT HOOVER, and the S. S. PRESIDENT COOLIDGE, built by the Newport News Shipbuilding & Dry Dock Co. and the S. S. MANHATTAN and WASHINGTON built by the New York Shipbuilding Co. Materials have also been supplied to the Bath Iron Works Corp., Bath, Me.

Shipping Board Revises Ship Sales Policy

In answer to an inquiry from a shipowner who contemplates construction of new tonnage, the shipping board directed in the future that vessels for unrestricted operation shall not be sold except on a cash basis and for not less than their recommended sales price. In deciding the acceptability of an offer consideration will be given to the requirements of the trade in which it is proposed to operate, the availability of privately owned tonnage and, further, the possibility of new construction rather than the purchase of a ship.

It is also recommended that in no instance shall a reduction in the sale price of the vessel be authorized as a consideration for an obligation on the part of the purchaser to undertake repairs and betterments.

Board Vessels Sold

On June 22 the shipping board authorized the Merchant Fleet Corp. to sell to the Merchants and Miners Transportation Co. the LAKE FLORIS and LAKE FITCH at the listed sales price of \$33,000 and \$31,000 cash, respectively, subject to requirement that the purchaser should expend not less than \$50,000 on each vessel in repairs and betterments with a guaranteed performance bond covering completion of the sales agreement.

The Merchants and Miners Transportation Co., Baltimore, has previously purchased six lake-type vessels from the board, which have been converted for use in its coastwise trade.

The LAKE FLORIS and LAKE FITCH will be used in the Florida coastwise trade as a feeder service to the Merchants and Miners Transportation Co., regularly established service.

Ship Radio Efficiency

The efficiency of present day ship radio equipment and the reliability of ship-to-shore radio service, received widespread attention when Raymond C. Moley, assistant secretary of state, going and coming from the London Economic conference, as President Roosevelt's special envoy, was kept in as close touch at sea by Mackay radio with the American delegation at London, and with the state department at Washington as though he were present at either capital.

Mr. Moley made the voyage to London on the S. S. MANHATTAN of the United States Lines and returned on the same vessel. The MANHATTAN is equipped with the advanced apparatus recently designed and produced by Mackay radio and first installed on the MANHATTAN and her sistership the WASHINGTON.

Milliken Elected Head of New Association

Capt. John F. Milliken, who for the last eleven years has been secretary-treasurer of the Neptune association, has been elected the first president of the recently organized United States Licensed Officers association. The new association is bringing all licensed American merchant marine officers into one powerful group to form a united front in dealing with their employers on the Atlantic, Gulf and Pacific coasts. Until this time licensed officers have been segregated in different smaller groups interested only in their own particular problems.

Bert L. Todd, well known for the last 15 years as head of the Ocean Association of Marine Engineers, has been elected vice president and secretary of the new association. Captain W. Shutz, president of the Masters, Mates, & Pilots association of the Pacific coast, was elected second vice president.

The board of trustees composed of five deck officers and five engineers also was elected, and includes Capt. E. F. Mitchell, George McDermott, Capt. S. J. Reynard, R. M. Brown, A. G. Menken, Clyde Dowe, A. E. Davison, Edwin E. Martini, Capt. L. A. French and Capt. F. W. Miller.

One of the first moves of Captain Milliken will be to seek a meeting with a committee of American steamship owners in an effort to draft a new working code fair to both sides and protecting the industry.

Sir John Ellerman Dies

Sir John Ellerman, one of Great Britain's leading shipowners and said to be the richest man in the empire, died at the age of 71 on July 17 in Dieppe, France.

During the war, Sir John Ellerman controlled about one-eighth of the entire British mercantile marine. He was knighted in 1905. His fortune is estimated at £30,000,000.

He was the son of a German consular official in England and was a self-made man, beginning as a clerk in a shipping office. At the time of his death he controlled 2,000,000 tons of shipping, and many other large interests.

He was born in the village of Brough near Hull. His father Johann Herman Ellerman was a native of Hamburg and his mother was an Englishwoman. His father engaged in business at Hull as a ship broker and corn merchant. The son was educated at Birmingham where he served for a number of years as an accountant. He entered the shipping business in 1899 and by his shrewdness and good luck soon became a power. His was the controlling interest in the Leyland line when the Morgan combine acquired this

service in 1901. He is said to have made more than £1,000,000 on this deal. From then on everything he touched seemed to turn out well. He acquired unsuccessful shipping lines and revived them. The famous Ellerman line was started by purchasing the Leyland Mediterranean fleet of 11 ships and a Greek line.

After this he bought the City line, of some 400,000 tons in all, in service between Glasgow and West Indies. He then acquired the Hull line, the Westcott & Laurence and the Bucknail line between Britain and South and East Africa. In 1916 he bought the 84 steamers of the Wilson line. By this time he shared honors with Lord Inchcape of the Peninsular and Oriental as one of the two leading shipping men of the industry.

It is said that his expenditures were always modest and that of his income, estimated to exceed a million pounds a year, he spent only 5 per cent and reinvested the remainder. He was a heavy contributor to charity but almost always anonymously. He hated publicity and even his closest business associates knew little of his private affairs.

Baltimore Shipping Active

The shipping activity in the port of Baltimore is steadily increasing. There is a constantly growing demand for cargo space on ships to and from Baltimore in coastwise, intercoastal and foreign trade.

The two Bethlehem Steel subsidiaries the Ore Steamship Co. and the Calmar line which had only six boats in operation on June 15, plan to have 26 ships in service by August 15.

The Munrio cargo vessel of the Munson line is going into service to the Gulf ports. The Quaker line has increased its calls at Baltimore for its 16 vessels from three to five each month. The Standard Shipping Co. recently had 30 vessels mainly tankers in layup in the port and now only has 13, there, including 6 which are undergoing repairs.

B. R. McNeill of the Merchants and Miners Transportation Co. asserted there has been a "healthy increase in business in the past two months." A number of officials of several lines have reported that their vessels are sailing with full cargoes for the first time in many months.

The Sperry Gyroscope Co. Inc. has announced that its school in Brooklyn, N. Y., for instruction in the care and operation of the gyro compass, gyro pilot and other navigation equipment will be closed for a period of one week beginning July 31. The school will be reopened Aug. 7 and instructions may be received as usual between the hours of 9 a.m. and 4 p.m. every week day except Saturday.

Seatrain Lines Decision Is Given by Commission

The interstate commerce commission on July 19 reported the following findings with reference to jurisdiction of the commission over the Seatrain Lines Inc.;

1. That Seatrain Lines Inc. is not a common carrier by railroad or an extension of a line of railroad within the meaning of those terms as used in the act.

2. That Seatrain Lines Inc. is a common carrier by water engaged in transportation of property partly by railroad and partly by water, that Seatrain Lines Inc. and the Hoboken Manufacturers Railroad Co. are used under a common control, management and arrangement for continuous carriage or shipment of property in railroad cars in interstate and foreign commerce. The Seatrain Lines Inc. and the New Orleans and Lower Coast Railroad Co. are used under a common arrangement for such continuous carriage and, therefore, that Seatrain Lines Inc. is subject to all provisions of the act, applicable to such a carrier.

3. That Seatrain Lines Inc. is not a "carrier" within the meaning of section 20 A, and

4. That the Hoboken Manufacturers Railroad Co. does not and may not compete for traffic with Seatrain, and therefore, neither is subject, because of any community of interest between them, to the provisions of section 5 (19)—(21) of the act.

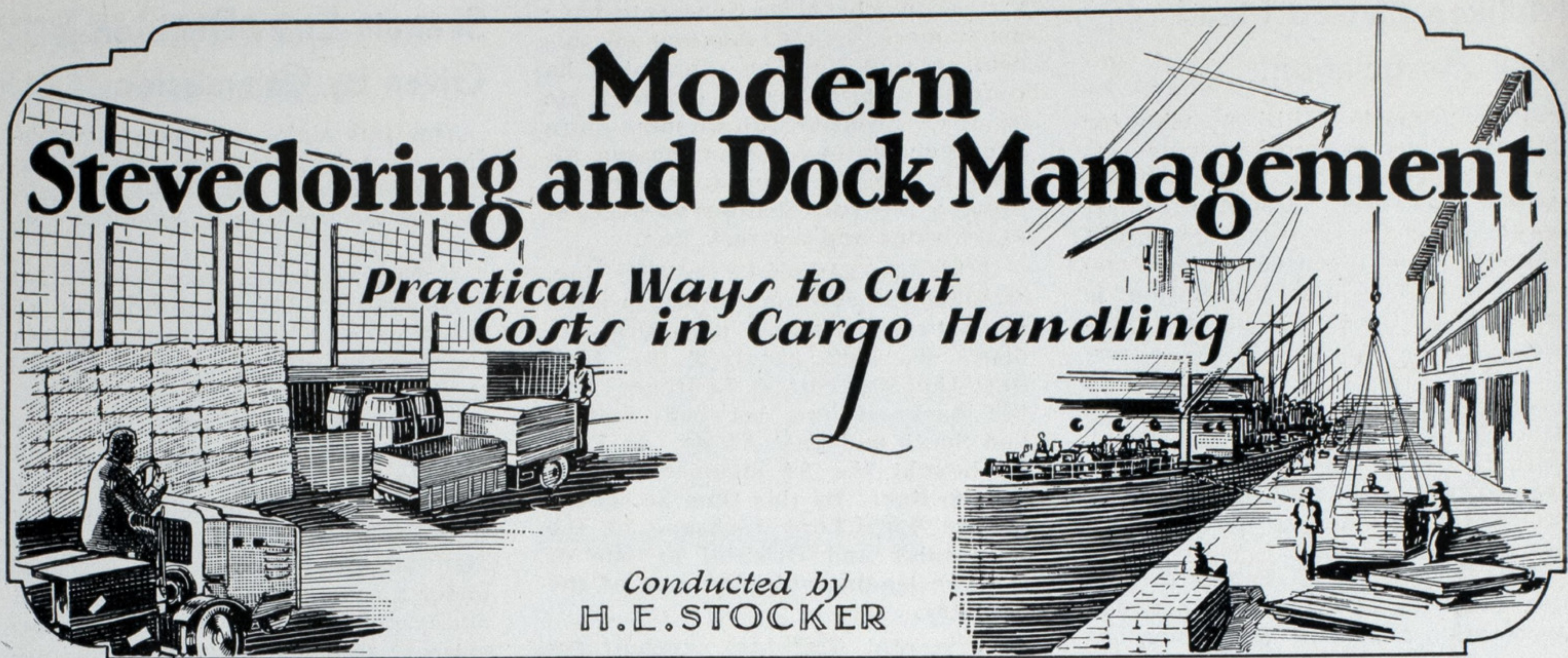
"We do not consider it necessary," the decision said, "to point out more specifically in what respects we consider that the respondents have violated various provisions of the act, or to make an order that they shall cease and desist from such violation.

"However, the respondents will be expected to take such steps within 60 days from the date thereof as may be necessary to harmonize their operations and relations with the various provisions of the act."

Lumber Rates Increased

Eastbound lumber rates, by water, for September, have been fixed at \$11.75 plus 25 cents surcharge per 1000 feet, according to an announcement made July 18 by Robert C. Thackara, chairman of the United States Intercoastal conference. This is an increase of \$1 over the August rate and \$1.50 over the rate for July. The rate for June was \$9.75. Indications at present are that the volume of lumber shipments will continue heavy, even beyond the forward rate fixing period.

Under the Copeland act the regular lines file minimum tariffs and no independent operator will be permitted to cut rates in competition with the majority of the companies engaged in this trade.



How Safety and Cost of Cargo Handling Are Under Supervisory Control

By Albert Banscher

MODERN stevedoring and dock management recognizes that a well organized accident prevention program not only saves dollars and cents in awards and insurance but also saves by a more efficient cargo handling operation. Manufacturers have found that a "safe factory is an efficient factory"; It is equally true that "a safe dock is an efficient dock."

The accident prevention campaign is only a part of the general safety program. While it is believed that approximately 80 per cent of all accidents can be eliminated by educating the longshoremen through the foremen, posters committees, etc., management on the other hand can contribute a great deal by scientific study and research. It is the purpose of this article to discuss these factors, which have a vital bearing on dock safety.

Effect of an Accident

In the physical layout of the pier, lighting, heating, ventilation, rest rooms, sanitary facilities and the proper movement of cargo must be determined from the standpoint of safety as well as other factors. A number of accidents are caused by stumbling and falling. With poor lighting this hazard is increased. Aside from the accident point of view, truckers must proceed cautiously to watch for objects lying about on the floor.

If an accident occurs, the entire force is demoralized. Each worker

becomes over-cautious and slows down his movements. Proper lighting therefore increases the speed of the cargo handled and reduces accidents. It is perhaps equally true that steamship piers do not have proper light during the day. Dirty windows do not allow adequate light and what little does come in is absorbed by dark walls. By having the windows cleaned regularly and the application of a good white-wash to the walls and ceiling, proper light will be furnished without using electricity. Proper heating, and ventilation must likewise be considered in pier layout.

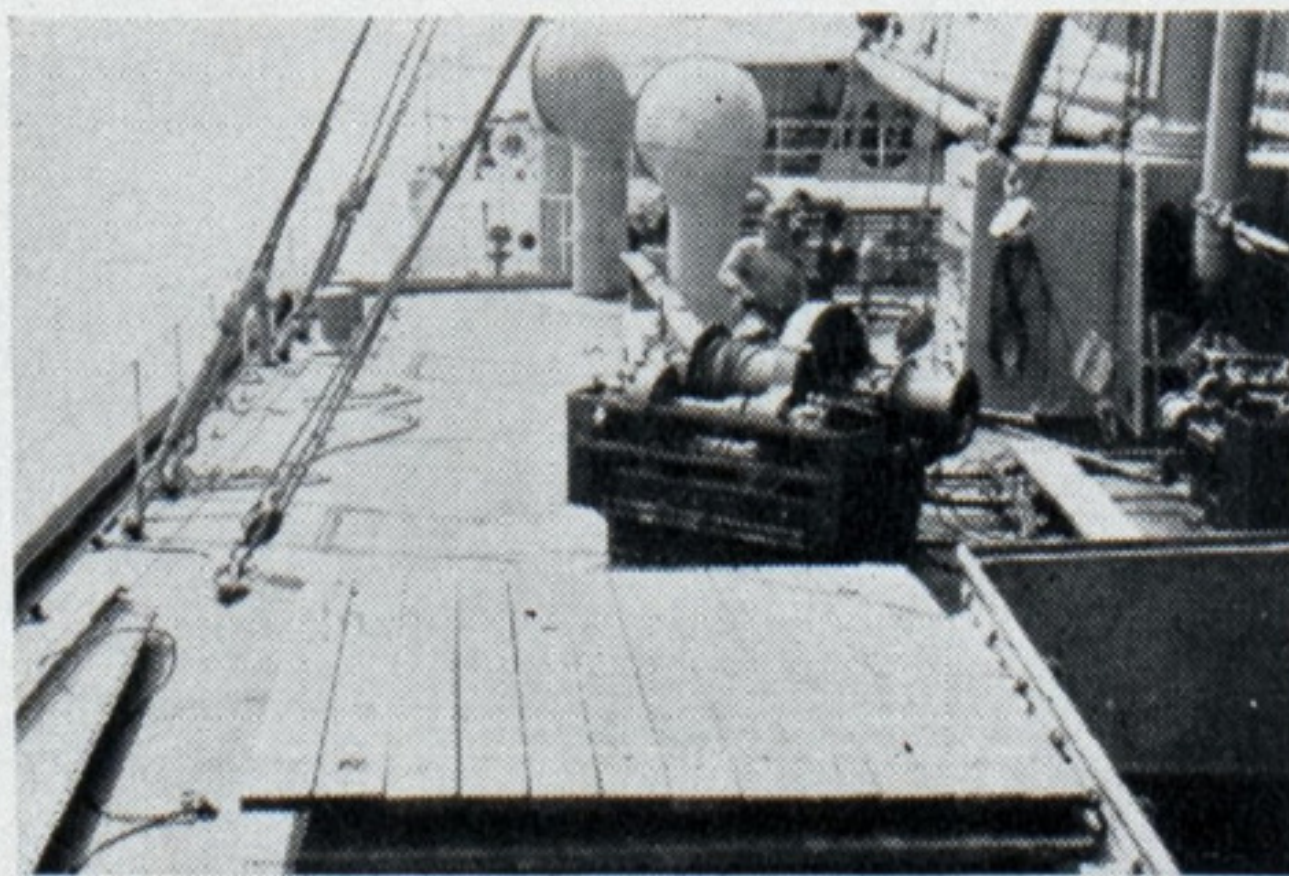
Correct ship design from the safety standpoint has recently been recognized as an important factor in the reduction of accidents. Wooden hatch covers have long been a source of numerous accidents. It is often found that the dimensions of the hatch covers of the weather deck are

different from these on the 'tween decks. As the wooden hatches are shuffled around a great deal and are put on carelessly, often fitting too loosely so that there is not enough surface under the hatch cover. Longshoremen and seamen walking on the hatch covers fall through, causing serious injuries. Shipbuilders and operators can easily standardize hatch covers. Hatch coverings, ship booms, side ports, in fact the whole ship design should be included in the study.

Analyzing the Work

Scientific management makes a through analysis of the work to be performed and the type of man needed to do this work. This includes job analysis, job specification, job classification and placing the right man in the right place. It becomes apparent that the essential requirement for the stevedore is physical strength and a large back. Thus having the requirements for the job it becomes necessary to select the men on the basis of physical fitness, other things being equal.

No physical examination, however, is given to the longshoremen before employment; on the other hand our best managed industrial concerns give a rigid physical examination to their office personnel. How many accidents and injuries could be eliminated by giving physical examination to longshoremen! Of course this would be disputed by some stevedore's who would claim that the per-



Cost and accidents reduced by bolting hatch covers together

sonnel is hired for a few hours at a time and therefore do not have permanent gangs. One stevedoring company handles the problem well by giving a thorough physical examination when the longshoreman has his first accident; even though it be merely a scratch or a splinter in the finger. Proper records are kept and in a short time it is known what men are not physically able to perform the work.

Hours of Work Considered

Working conditions and hours of work have a bearing on accidents. Theoretically the eight hour day and forty-four hour week has been accepted as the standard for longshore work, but in practice longshoremen are called upon to work at any hour of the day or night, depending upon ships arrival and departure. Long working hours may be followed by days of inactivity. There is too, an oversupply of labor in those ports which are not decasulized, adding to the multitude of troubles. Working conditions on the other hand may be said to be poor; being comparable with factory working conditions twenty-five years ago. No wonder the longshore industry is placed at the head of the list of casual industries.

To furnish an example of how working conditions may be improved and at the same time increase cargo handling efficiency, a thorough analysis of industrial fatigue studies should be made. To date, little has been done along this line in dock management; but it merits the attention of every shipping and stevedoring executive. It is a recognized fact that more output can be achieved by applying one's self (a longshoreman for example) steadily for short periods and then resting than by working over a long period without a rest period. Many industrial plants have adopted the "second breakfast" idea or the "mid-morning" rest period, allowing their laborers to stop work, have a cup of coffee and a sandwich or two and a comfortable place to sit for ten or fifteen minutes. Going back to work, the laborers have acquired strength and can work more efficiently and more safely. What has been tried and proven in the industrial field must work in the marine industry.

Working conditions in the hold of the ship can also be improved to a great extent by giving a little time and thought. Here again proper lighting is necessary not only to reduce accidents but to increase efficiency of the gang. Proper ventilation is also necessary, especially when gasoline engines are used in side port operation.

Much has been written concerning marine safety bonus systems but to date only a few companies have tried this plan. Some stevedores have given a small bonus to their foremen if there are no accidents in load-

ing and discharging. Here again, the experience of our shore industrial companies is valuable. In order for a man to do his best work, he must have an incentive, which may be an advancement to a better position or a financial gain. If we are to provide a bonus system for longshoremen, it is obvious that it must be a financial incentive. Shipping companies and stevedores would do well to make an analysis of the practicability of adopting a bonus system for longshoremen as well as foremen. A small bonus for those longshoremen who had no accidents over a given period gives them an incentive; thus reducing injuries, which in turn reduces claims and insurance rates. Another plan would be to give a bonus to the gang which had the least number of accidents over a given period.

Whatever system may be adopted, it is necessary for the safety engineer to analyze all the factors of this

Improved hatch covers promote safety. These covers are of double length and thus handling accidents are reduced



problem first, and then determine the one best method to be followed. It must be borne in mind that longshoremen as well as foremen must share in a bonus system. This appeals to laborers more than any other plan that the management may adopt. Individuals work to earn money, the same as corporations are in business to make a profit. Give a longshoreman a financial incentive and he will talk safety, think safety and above all, work safely.

Tried in Shore Industries

All of the plans mentioned in this article have been used successfully by industrial companies. With the exception of ship design and pier layout they all have become basic for a well developed personnel program. Factory industrial policies have been developed to a high degree of efficiency and it is necessary for shipping and stevedoring executives to make a thorough study of these policies. Many executives claim that stevedoring is a hazardous industry and always will be, regardless of what policies may be adopted. This is by no means true. There are many occupations in the industrial field

which are as hazardous, if not more so, than stevedoring, yet their accident records are much better than cargo handling accident records.

A great deal depends upon the point of view management has toward safety. The executive must be thoroughly convinced of the practicability of adopting these plans, for no plan can succeed in any organization without the backing of the management. The management must control, direct and coordinate all activities in the business. It must then delegate proper authority and responsibility to minor executives and foremen, for our modern organization is built on the principle of functionalization.

Management on the other hand must also be convinced that the bonus system, the rest period system or any other system adopted to reduce accidents will save money over a period of years. The savings

resulting from an accident prevention program, or any part of it, are indeed difficult to ascertain. However, those companies that have adopted a program, whether industrial or marine are benefited from reduced accident claims and increased efficiency. One marine company within a period of two years reduced the number of accidents from 290 to 42. This company in addition using the general safety methods, had a bonus system and medical department. The second year they eliminated one of the severest types of injuries.

The American steamer ARIZPA put into Boston with a fire in her hold, while in passage from Mobile to Bremen with a cargo of cotton, resin and lumber. She resumed her voyage to Germany on June 15. The cargo removed from No. 4 hold was reloaded, with the exception of the damaged cotton, 50 bales of which was left behind. The deck cargo of resin was also placed on board. Only 8 bales were burned, the remainder being damaged by water, which was poured into the vessel to subdue the flames.

Terminal Facilities Under Way At Port of Cartagena

NEW terminal facilities are being completed for the port of Cartagena in Colombia. In 1930 the old timber wharf was destroyed by fire and since that date it has been necessary to lighten cargo. In April, 1932, the Colombian national government awarded a contract to Frederick Snare Corp. New York city to construct new facilities at a cost of \$2,850,000, to be completed within 27 months.

The present project consists of the construction of two piers and a bulkhead, together with two pier sheds and a bulkhead warehouse. A rail connection was built to connect the new terminal with the railroad serving the port, and the canal connecting Cartagena with the Magdalena river, the chief transportation artery of the republic was dredged to a depth of 11½ feet to accommodate river boats and barges bringing coffee and other products of Colombia to the sea and returning with general cargo to the interior.

This canal, called El Dique, is 100 miles long. Formerly the use of the canal was restricted because of poor maintenance and because of the necessity of the boats crossing the Bay of Barbacoas, which is to the west of the Bay of Cartagena. The boats could not cross this bay in stormy weather, which caused bad traffic delays.

The two piers are 130 feet wide and 600 feet long and extend from the bulkhead at an angle of 65 degrees.

The piers and bulkhead are of concrete construction. The pier sheds are 80 feet by 570 feet. The roof of the sheds consists of an asbestos cement tile imported from Italy. The water area between the two piers which is 400 feet wide, will be used

by the river boats. There will be two flush narrow gage tracks along the apron with a cross-over track at the center of the pier to facilitate switching cars. Spanning the railroad tracks of each pier there will be two three-ton semi-portal electric cranes for handling cargo between the piers and the river boats. Cranes were provided because the river boats are without facilities for loading and unloading cargo and handling by cranes was considered more satisfactory than trucking up and down gangplanks.

Provision is being made for one flush railroad track down the apron on the opposite side of the pier. This side will be used by ocean vessels. Two three-ton cranes are being provided, primarily for loading and unloading of the river boats.

The bulkhead extends for 1065 feet. It is to be equipped with a 15-ton fixed full portal crane and two full portal three-ton traveling cranes. The bulkhead shed will be 80 feet by 300 feet. Three railroad tracks are being constructed in the rear of this shed.

The stringpiece is flush with the floor of the piers and bulkhead. Electric lighting is provided throughout the terminal.

Gravity and belt conveyors and other equipment will be supplied for the economical and expeditious handling of cargo. At the present time approximately 250,000 tons of cargo moves through the port yearly. The largest single item is coffee, which product being in uniform units, lends itself readily to handling by conveyors.

A 20-ton floating derrick will be available, together with six lighters and a tugboat.

The entrance channel to the port of Cartagena, known as Boca Chica, is dredged to a 40-foot depth and a

width of 500 feet. An entrance nearer the city, called Boca Grande, was filled in by the Spaniards as a military measure in the days when the city was attacked and sacked frequently by the English.

From the entrance to the piers on Boca-Chica, there is a deep bay. Alongside the side of the piers occupied by ocean vessels, 40 feet of water is available, while a depth of 33 feet is available elsewhere.

The material dredged in the construction of the pier was deposited in the area back of the piers, reclaiming 23 acres for warehouses, railroad yards, etc. The port plans for the future provide for four additional piers and sheds with connection bulkheads, and for additional bulkhead warehouses.

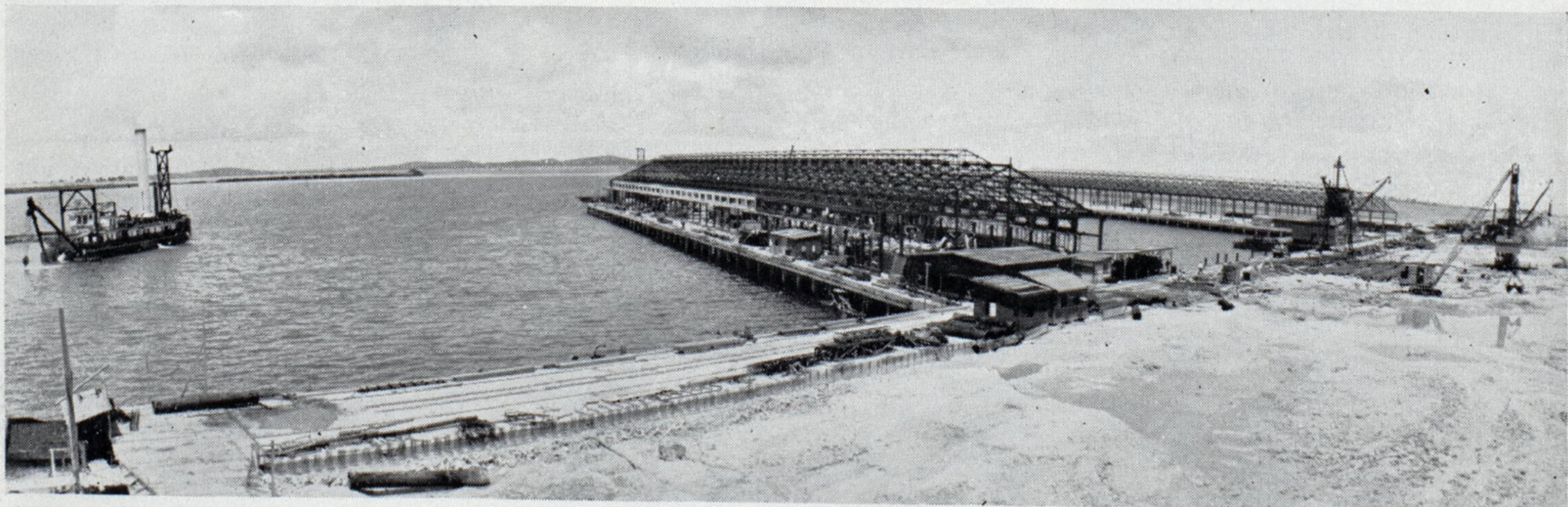
Lewis Pfeiff Dies

Lewis Pfeiff, director and traffic manager of the United States Steel Products Co., and director and vice president of the Isthmian Steamship Co., New York, died recently at the age of 64. He had served 44 years with the United States Steel Corp. and its subsidiary companies, having entered the employ of the Washburn & Moen Mfg. Co. in 1889.

This company later merged with the American Steel & Wire Co., which in turn went into the organization of the United States Steel Corp. in 1901. On the formation of the United States Steel Products Co. in 1903, Mr. Pfeiff was transferred to that company.

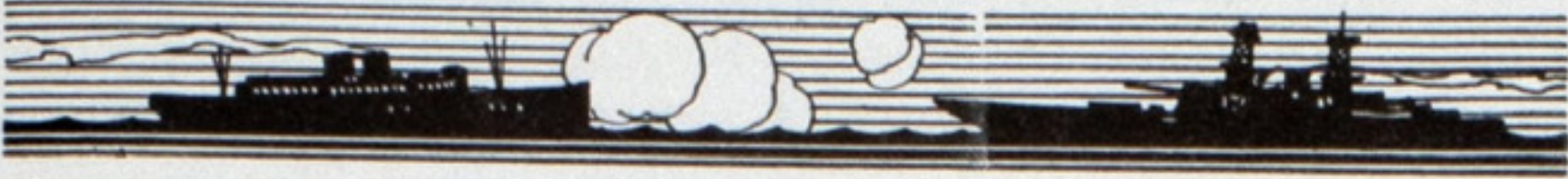
For several years he was in charge of the operation of the Isthmian Steamship lines, then part of the United States Steel Products Co., and was well-known throughout railroad and steamship circles, due to his active participation in the exportation of corporation products.

The forty-first annual meeting of the Society of Naval Architects and Marine Engineers will be held on Thursday and Friday, November 16 and 17, 1933. The committee on papers has arranged a tentative program of papers.



General view of piers and bulkhead under construction at the Port of Cartagena, Colombia

Useful Hints on Cargo Handling



EFFECT of light colored surroundings in increasing illumination is not fully realized. Often ceilings and walls have been allowed to become almost black thus reflecting practically no light. A little white paint will save a great deal on the light bill and increases the use of daylight.

In studying the artificial lighting of 58 large steamship piers in New York, data were obtained on the size of the pier, number and size of lighting units, spacing and height of lamps, height of ceiling, color of walls and ceiling, class of traffic, watts per square foot and general conditions bearing on artificial lighting.

Analysis of the results showed that 6.2 per cent had good illumination, 51.2 per cent had fair illumination, and 42.6 per cent had entirely inadequate and generally poor illumination. The average watts per square foot of those piers electrically lighted was 0.16, with a maximum of 0.34 and a minimum of 0.05.

Very much better illumination results could have been obtained in practically all instances if the existing equipment had been well maintained and the surroundings given an occasional coat of whitewash or white paint. It is interesting to note in this connection that 14.5 per cent of the piers had very dark (almost black) surroundings, 52.8 per cent had dark surroundings, 20 per cent medium colored walls, 9.1 per cent light colored walls and only 3.6 per cent had white walls and ceilings.

Such conditions would not be tolerated for the handling of materials in ordinary manufacturing plants and the surprising feature is that it has been impossible to get along at all with such poor lighting.

The following basic requirements for the lighting of piers should be followed:

1. Enough light should be provided to read markings, labels, and way bills without eye strain, and to see one's way about the entire area.

2. A minimum of $\frac{1}{2}$ -foot candle seems desirable in all parts of the pier or warehouse.

3. In many cases lamps should be hung as high as possible. If properly applied this does not reduce the average intensity of illumination.

4. All lights to be efficient require a diffusing globe or reflector which protects the eyes. A good steel

THIS page is being devoted to short items on all matters having to do with the more efficient turnaround of ships. These items are intended to be of a helpful nature.

We will welcome for this page brief descriptions, illustrated if possible, of any better or safer way of performing any function in cargo handling. Also, any questions submitted will be answered by the editor.

reflector is generally the solution. A reflector has the further advantage of directing the light efficiently where it is needed, rather than allowing a large portion to escape to the ceiling and the walls.

5. After the system is installed, it should receive careful and regular maintenance.

6. As a rule, large lamps are more efficient and cost less per watt of illumination than the small lamps.

A chief executive who admits his lack of experience in traffic matters but affirms his determination to learn the ins and outs of traffic management so he can effectively co-ordinate the work of the operating and traffic department is a powerful agent for profits.

Turnbuckles for Gangways

ORDINARY small lashings commonly used for holding brows in place, gangways to ports, fairing irons over cracks, etc., are at best only a makeshift. Though not individually expensive, the amount of material used in renewing them in the course of a years time is considerable. An even more important item is the delay caused in working the ship by necessary adjustments, tightening up, etc. Too often it is the case of finding a piece of line and fixing it for the time being.

Turnbuckles and short lengths of chain are coming more and more into use for the semi-permanent lashing. They cost a little more to install but once in place they last indefinitely. Another advantage is that such permanent lashings may be shifted about for use on other installations, while at the same time being better suited and safer for the purpose intended.

Heavy turnbuckles rather than light ones should be used as they are more suitable for shifting to other uses as may be required, and they are not so easily bent and take no more time to tighten up.

Steadying Nets Are Used

SMALL nets for laying on top of skid loads to steady the cases or packages when being carried across the pier are used with good results.

These nets are made of 9-thread rope with approximately 12-inch mesh and in size of about 8 feet square. After a high stack of cases have been loaded on skids, the nets are thrown over and allowed to hang down over the sides. They are held secure by weight and friction and the mesh, allowing one side of the load to work against the other, thus holding the entire pile on the skids.

The nets are purposely made light for ease in throwing over load. Two men, taking hold of opposite sides, can easily throw the net up and over a load. The lightness also tends to save the net as they are not worn out by their own weight. The saving is obvious in the elimination of broken cases, due to falling, and subsequent damage claims.

Slings Trailers Over Side

FOR slinging trailers the manufacturer provides four small stops on the under side of the trailer against which slotted hooks are fitted. These hooks are attached to the ends of a set of four bridles. This requires that four separate hooks be attached each time a trailer is hoisted.

To simplify the attachment one steamship company uses a set of two bridles, having medium sized chain in the lower part of the bights. This eliminates 50 per cent of the work, as only two parts are handled instead of four. Furthermore, it is much easier to merely whip the bights under each end rather than to make fast four slotted hooks. The links of the chain engage the sharp edges under the trailer angle irons and thus prevent the trailer from turning or slipping while being hoisted.

By the use of this arrangement considerable time is saved in slinging the trailers into the hold or upon the pier.

Up and Down the Great Lakes

Ore and General Freight Increases—Agreement Rejected—Lake Levels—
Propeller Club Activities—More Ships in Service—Coal Shipments Large

TOTAL traffic through the United States and Canadian locks at Sault Ste. Marie canals during June, 1933 amounted to 3,582,282 tons, an increase of 1,594,400 tons over June, 1932. Wheat showed an increase of 5,532,425 bushels, iron ore an increase of 1,073,641 tons, flour an increase of 105,110 barrels, and soft coal an increase of 199,186 tons. The amount of hard coal decreased by 10,668 tons.

During June 1,238,753 tons of freight transitted the Welland Ship canal, an increase of 174,226 tons over the corresponding month last year. The chief increases were: soft coal, 167,444 tons; wheat, 63,684 tons; and merchandise, 45,279 tons. Decreases were shown as follows: barley, 29,674 tons; pulpwood, 18,510 tons; and petroleum and other oils, 12,606 tons.

Traffic on the St. Lawrence canals during June reached a total of 994,429 tons, an increase of 91,645 tons over June, 1932. Gains registered were as follows: wheat, 78,018 tons; merchandise, 42,030 tons; and hard coal, 19,334 tons. Rye decreased 47,152 tons and barley decreased 38,846 tons.

Board Rejects Agreement

The shipping board on July 11 held that the Milwaukee Boat Co. is not a common carrier or other person subject to the shipping act of 1916 and declined to grant approval under section 15 of agreement between that company and the Pere Marquette line steamers in regard to the operation under charter of the vessel MISSOURI.

The Wisconsin and Michigan Transportation Co., a competitive line operating on Lake Michigan, filed a protest with the board against the approval of the agreement and hearings were granted by the board to all parties concerned.

Eastland Found Seaworthy

The excursion steamer EASTLAND, in 1915 capsized and sank in the Chicago river, with a loss of 834 lives. It was the outstanding maritime disaster of its time and many long investigations were made. Now at this late day, 18 years after the disaster, a special naval commissioner, Lewis F. Mason, is said to have reported to the Federal court that this vessel was seaworthy at the time of the accident

except for improper distribution of water ballast.

It was found according to the report that the tanks on the port side were full and those on the starboard side practically empty and that this condition contributed to the overturning of the vessel which was crowded with passengers for a cruise on Lake Michigan. In effect the report recommends that no claims be allowed for damage suits as a result of the disaster.

June Lake Levels

The United States Lake survey reports the monthly mean stages of the Great Lakes for the month of June as follows:

Lakes	Feet Above Mean Sea Level
Superior	602.63
Michigan-Huron	578.72
St. Clair	574.61
Erie	572.04
Ontario	245.45

Lake Superior was 0.26 foot higher than in May and it was 0.22 foot higher than the June stage of a year ago.

Lakes Michigan-Huron were 0.26 foot higher than in May and they were 0.08 foot higher than the June stage of a year ago.

Lake Erie was 0.06 foot lower than in May and it was 0.18 foot higher than June a year ago.

Lake Ontario was 0.13 foot higher than in May and was 0.60 foot lower than the June stage of a year ago, 0.92 foot below the average stage of June of the last ten years.

More Ships Enter Service In Great Lakes Trade

More and more ships are being called back into service on the Great Lakes, and still further increasing activity is looked for. From a statement compiled by A. B. Kern of the M. A. Hanna Co., 164 American lake ore vessels of a total trip capacity of 1,432,900 tons were in commission as of July 15. This represents 59.86 per cent of the total aggregate trip capacity of 2,763,000 tons of American lake ore vessels, and 49.70 per cent of the total number of 330 vessels.

Of these 164 vessels no less than 116 were engaged in the ore trade. This is an excellent showing as compared with the standing of ships in

commission Aug. 1, 1932, when only 76 vessels or 22.98 per cent of the total capacity were in operation and only 17 were in the ore trade.

With the Pittsburgh Steamship Co., subsidiary of the United States Steel Corp., and largest vessel owner on the Great Lakes, issuing orders on July 20 for commissioning 40 additional vessels over and above the 31 that were already in commission, it may fairly be said that the bulk shipping trade is rapidly approaching a pre-depression activity. These 40 additional ships will give employment to about 1200 men, and when all commissioned will bring the total number of American lake ore vessels in service to well over 200. What the remainder of the season has in store, it is still difficult to predict with any certainty. But it is now generally believed, that there will be continued and increasing activity.

Propeller Club Meeting

The first annual meeting of the Propeller club, port of Cleveland, for the purpose of electing a board of governors and officers, was held at the Sleepy Hollow Country club on July 10. About 45 members attended. A. B. Kern, president of the club, presided.

The following were elected to the board of governors for a three year term: A. B. Kern, G. C. Hutchinson, W. P. Schaufele, F. S. Hutchinson, A. T. Wood and G. A. Myers; for the two year term, R. W. England, L. C. Hinslea, H. N. Herriman, J. L. Wallace, and R. H. Burns; and for the one year term, C. R. Kells, J. H. Lawrence, W. C. Dressler, E. L. Jefferson and B. R. Tewksbury.

The officers of the club selected by the newly elected board of governors are: A. T. Wood, president; L. C. Hinslea, vice president; G. C. Hutchinson, secretary; and R. H. Burns, treasurer. The term of the officers is for one year.

Over 20 new members joined the club recently, making a total membership of about 130. The next meeting is to be held at the Pepper Pike Country club on Aug. 9, and will be restricted to members only.

L. C. Hinslea was appointed delegate to the annual convention of the Propeller club of the United States to be held at Pittsburgh, Oct. 12, 13, 14.

Baltimore Needs Canal For Its Shipping

Few public works projects in the Baltimore and adjacent area would be of more practical benefit to commerce and industry than improvement of the Chesapeake and Delaware canal to furnish Baltimore a closer deep water outlet to the city and shipping contact with the ports of the North Atlantic, according to the port of Baltimore bulletin. It should receive primary consideration in state and city programs under the public works section of the national industrial recovery act, for its employment features and its sound public benefits and practical returns to private business.

The association of commerce of the port of Baltimore has asked that this canal deepened to 30 feet and widened to 300 feet. Minimum certified savings to Baltimore's present shipping, through such improvement total \$950,000 for a year, and would warrant a capital investment of over \$20,000,000.

The major canal improvement would result in the initial working of ten dredges, each requiring 100 men, or a total of approximately 1000 workers directly employed at the beginning and completion of work. At the peak of the two years work required a maximum of 1700 men would be directly employed while another 1500 would be indirectly employed in supplying the necessary materials and equipment.

A deep water canal would save the time of one day to a coastwise, intercoastal or foreign ship on the New York-Philadelphia-Baltimore or similar run, or on the run between Baltimore and New York. It would influence the routing and movement of one in every two ships using the port of Baltimore. It would serve the interest not only of steamship lines but of large industrial carriers on the seaboard and of shippers of cargo in the interior of the United States. At least 2000 ships in all trades, not using the canal at the present time because of inadequacy in size, would be in the position to do so were it improved to a major depth and width.

Ore Shipments Increase

During June shipments of ore from upper lake ports amounted to 1,280,669 tons as compared with 233,557 tons for the month of June, 1932. Up to July 1, 1933, a total of 2,264,413 tons of ore were shipped from upper lake ports as compared with 388,456 tons up to July 1, a year ago. Balance of ore on docks at Lake Erie ports, July 1, 1933 amounted to 4,788,748 tons, a decrease of 585,589 tons from the amount on docks July 1, 1932 which was 5,374,337 tons.

With steel production steadily increasing, and as this is written about

equal for the same time in 1930, it is now generally agreed that ore shipments will continue to increase. Estimates of the total ore to be brought down this season lie between 20,000,000 and 25,000,000 tons as compared with a total of 3,607,119 tons for the season of 1932, and 24,259,964 tons for the season of 1931, and the record movement of 64,917,703 tons for the season of 1929.

Coal Movement Increases

With coal shipments from Lake Erie ports in the first half of July around the million ton mark per week, the total movement for this season up to July 17 amounted to 10,848,869 tons. This compares favorably with the corresponding period for the season of 1932 which aggregated 7,320,118 tons.

In addition to cargo coal, vessels also loaded greater quantities of fuel coal bringing the consumption of bunker coal for the season to July 17 up to 290,448 tons as compared with 179,312 tons for the same period in the season of 1932.

Foreign Shipping

(Continued from Page 17)

pressure boilers for their present diesel engines, at the same time giving them new bows for a much higher speed.

The Southern Railway Co. has at last got under way with the proposed train ferry across the channel, Dover being the British terminal and Dunkirk the French, to the annoyance of Calais. Dunkirk, however, has excellent water and the local authorities have started well by resolving to levy their dues on the capacity of the wagons carried by the ferries and not on net registered tonnage. The ships are to be built by Messrs. Swan Hunter & Wigham Richardson on the Tyne, and are to be 360 feet long with a speed of 16½ knots by single reduction geared turbines. Their business will be principally in perishable cargoes, fruit, etc., but they are fitted to take through sleeping cars so that passengers may get from London to all the principal points on the continent without changing their carriage.

The court has appointed a receiver to Palmers' Shipbuilding & Iron Co., one of the most important shipbuilding concerns in the North of England. It is hoped that the firm will be able to overcome its difficulties, for it has had a wonderful history since 1851 and maintains a magnificent plant, but during the last few years has met with the worst of luck at every turn.

German shipbuilders are in even worse state than British, but they entertain hopes of a revival, particularly with orders from foreign countries. They make a great feature of their up-to-date designs.

Large Expenditures Noted For Marine Industry

The United States shipping board analysis of financial condition of shipowning companies of the United States for the calendar year, 1932, operating as common carriers in foreign, intercoastal and coastwise trades, shows that \$27,759,000 was paid for crews' services and \$35,186,000 for stevedoring during the year, while \$9,749,000 was paid in Panama canal tolls. It is conservatively estimated that these companies expended a total of approximately \$100,000,000 for American labor and products during the year 1932.

The operating results analyzed do not include tankers aggregating nearly 2,500,000 gross tons. World trade has been greatly depressed during 1932 and, like other industries, the American shipping industry has been operating upon a much lower basis than in normal times. The cost of floating equipment of all companies including ships owned by industrial carriers, is approximately \$850,000,000.

With a shore line of more than 15,000 miles, the United States has one hundred and fifty odd seaports which engage in foreign trade. Federal, state and municipal authorities have expended for seacoast, harbor and channel improvements upwards of \$600,000,000, and a recent survey shows that American seaport water terminals, utilized wholly for foreign trade, reached nearly one billion dollars. Shipyards, alone, represent an investment in excess of \$100,000,000 and could not be replaced today for that amount.

Capt. D. C. Sullivan Dies

On July 14, at the age of 74, Capt. Daniel C. Sullivan died at Milwaukee, Wis. He was one of the oldest active shipmasters on the Great Lakes and had for many years been master of Franklin Steamship Co.'s vessels. In 1906 he was captain of the E. J. BERWIND of this fleet and in 1917 he brought out the EMERY L. FORD for the same company. Since 1923 until the end of last season, he served as master of the FRED G. HARTWELL.

After a career of 60 years on the lakes he retired early this spring due to ill health. He started sailing on the lakes at the age of 14.

Captain Sullivan was a brother of Dennis Sullivan, founder of D. Sullivan & Co., Chicago.

At 77 years of age, Capt. William Gnewuch, veteran Milwaukee harbor pilot, recently retired from active duty. For sixty years he served on Lake Michigan.

Code of Fair Practice

(Continued from Page 13)

said that to go to the 30-hour week would mean 39 per cent, or about \$95,000,000, increased labor cost for the contemplated total naval program of \$238,000,000, over that of the 40-hour week proposed by the shipbuilders and endorsed by the navy department. Also, that such an increased cost might result in the necessity of a curtailment of the navy building program.

The code as submitted by the National Council of American Shipbuilders, the New York and New Jersey Dry Dock association, and the Pacific Coast Dry Dock association, as well as four individual shipbuilding yards, in all representing about 90 per cent of the industry, is given in full below, with the additional provisions controlling plant expansion and the administration of the code:

1. For the purpose of carrying out the policy of congress as expressed in the national industrial recovery act, the shipbuilding and ship-repairing industry of the United States, as represented by the National Council of American Shipbuilders, New York and New Jersey Dry Dock association and various shipbuilding and shiprepairing companies on the Gulf and on the Pacific coast, hereinafter referred to as the associations, adopts the following code:

2. The terms shipbuilder and shiprepairer, when used in this code, includes a person, partnership or corporation engaged in the business of building, fabricating, repairing, reconstructing, remodeling, and assembling oceangoing, harbor and inland water-way vessels and floating marine equipment of every type above ten tons, including the building within their plants of machinery, equipment and other ships parts.

3. Any existing shipbuilders or shiprepairers, whether members of any association or not, may participate in this code and any subsequent revision thereof by indicating their intention of fully subscribing to the provisions of the code and by defraying their prorata share of the cost of administering and enforcing it and by assuming the responsibility of such participation, even though they may not be members of the association.

4. The shipbuilders and shiprepairers will comply with the following specific provisions of the national industrial recovery act:

(a) That employees shall have the right to organize and bargain collectively through representatives of their own choosing, and shall be free from the interference, restraint, or coercion of employers of labor, or their agents, in the designation of such representatives or in self-organization or in other concerted activities for the purpose of collective bargain-

ing or other mutual aid or protection;

(b) That no employee and no one seeking employment shall be required as a condition of employment to join any company union or to refrain from joining, organizing, or assisting a labor organization of his own choosing; and

(c) That employers shall comply with the maximum hours of labor, minimum rates of pay, and other conditions of employment, approved or prescribed by the President.

(d) The President may from time to time cancel or modify any order, approval, license, rule, or regulation issued under this title.

5. No individual will be employed in excess of forty (40) hours in any one week except as exempted in the act.

6. The minimum rate of pay for labor except apprentices, casual and incidental labor, shall be thirty-five (35) cents per hour in the South and forty (40) cents in the North.

7. To accomplish the purpose contemplated by this act, the members signatory to this code agree that it shall be an unfair method of competition to sell below a reasonable cost arrived at by a system of formulas established by the associations.

8. It shall be a violation of the code to give or accept rebates, refunds, allowance, unearned discounts or special services directly or indirectly in connection with any work performed. Bills for insurance work shall not be receipted until payment is made.

9. This code is subject to modification or enlargement as experience with its operation develops the necessity therefor.

10. This code shall become effective ten (10) days after its approval by the President.

Additions to the Code

Above is the original code as submitted. As a result of the hearings July 19, 20 and 21, the following additional provisions were incorporated in the code:

"The present capacity of active shipbuilding and ship repairing companies of the United States as a whole, is in excess of present or any prospective needs. Therefore, it will be considered a violation of this code to make any material increase in the plant capacity of the industry, such as new shops other than to replace existing shops, new dry docks or marine railways, or new shipyards, during the life of the national industrial recovery act.

"The administration of this code in the shipbuilding and ship repairing industry will be undertaken by committees elected by the industry, co-ordinated by the national committees which would co-operate with the administrators as a planning and fair practice agency for the industry."

Water Transportation

(Continued from Page 20)

have done to improve and deepen the navigable waters of rivers, lakes and harbors, enabling us to operate longer and larger ships; the builders of the Panama canal, the civil engineers and mechanical engineers who have done so much in the construction of our modern terminal and cargo handling machinery, and who have made practicable the coordination of rail and water transportation. The engineers who have perfected the wireless, the radio and other aids to navigation must not be forgotten.

We cannot pass without recognizing the great part taken by the officers and seamen, both deck and engineer departments, and the important role these men have had in upbuilding our merchant marine, not only in peaceful carriage of commerce, but in protection of that commerce in time of war.

It is fitting at this time to pay tribute to the master builder. The last slide shown is the American clipper ship RAINBOW of New York, the first Yankee clipper ship and forerunner of the great fleet that made the United States "mistress of the seas." It is only proper to pay tribute to her designer and master builder John W. Griffiths. Let me quote from William Brown Maloney's most interesting historical book, *The Heritage of Tyre* which he has dedicated to the memory of John Willis Griffiths. I quote:

"To the memory of John Willis Griffiths, whose genius revolutionized the science of merchant shipbuilding and naval architecture and enthroned the United States as 'mistress of the seas.' From his poet's brow the peerless American clipper leaped full blown to make a starred banner the talisman of a world's commerce. The twin and triple screw greyhounds are the posthumous children of his dream. Ocean conquerer by sail and by steam, he sleeps as he died, unrecognized and unsung—forgotten by a heedless people even as they have forgotten the sea heritage through which they achieved their national existence."

Our sea heritage is not forgotten. It has only been temporarily ignored. We are once more awakening to the full value of that great heritage which is rightfully ours. Our people, through congress, are demanding the rehabilitation of the American merchant marine to the point where the greater part of our goods is carried in our own vessels. We intend to protect and expand our own sea commerce. Congress has taken a leaf from the history of other nations and has come to the support of our shipping. The continuation of this support assures the success of our venture. Our nation is becoming shipminded. The pioneer spirit of the clipper ship days is still with us and we have set sail on a new voyage of prosperity.

Personal Sketches of Marine Men

Eugene F. Moran, President, Moran Towing & Transportation Co., Inc.

By Ben. K. Price

HE HAS been closely identified with and taken a leading part in the marine activities of the port of New York.

THE company which he heads, now one of the largest of its kind, was established by his father over 70 years ago.

FROM 1918 to 1921 he served with distinction as director of the army and navy floating equipment in New York harbor.



FEW men have been more prominently, and at the same time more generally identified with the maritime activities of the port of New York than Eugene F. Moran. President of the Moran Towing & Transportation Co. Inc., New York City, and heading various other affiliated companies, his interests have not stopped there, but have extended in a variety of directions, from marine pageants in honor of celebrated guests of New York to the more prosaic responsibilities of the chairmanship of the rivers, harbors and piers committee of the Maritime Exchange of the port of New York, a position, incidentally, which he has held for more than 20 years.

Nor have his activities been local. From 1908 to 1912, he was president of the National Board of Steam Navigation, an organization of vessel owners, and during the World war his duties carried him afar. His name is favorably known in every port of the country. He is identified with banks and other enterprises outside the marine field.

Born in Brooklyn March 24, 1872, Mr. Moran attended the parochial and public schools of that city and started his business career at an early age as deck hand on one of his father's tugs. In 1898 he was made manager of the business, a business which was established by his father, Michael Moran, in 1860. He succeeded to the presidency upon his father's death in 1906.

Mr. Moran is also president of the Moran Bros. Contracting Co. Inc., Moran Shipyards Corp., Moran Lighterage Corp. and the Atlantic Savings & Loan association, all of New York City. He also is chairman of the boards of the John E. Moore Co. and the Interports Transportation Corp.

In 1917, before the entrance of the United States in the World war, he was commissioned a lieutenant in the United States naval reserve, later to be appointed by Franklin D. Roosevelt, then assistant secretary of the

navy, as a member of the special board organized to purchase and fit out United States patrol boats for duty abroad. Still later he was assigned as an aide to Admiral L. R. de Steiguer, fitting out mine sweepers for duty on the Atlantic coast. He was director of the army and navy floating equipment in New York harbor from 1918 to 1921. On March 19, 1921, he was honorably discharged with the rank of lieutenant commander, U.S.N.R.F.

He was active in the formation of Hudson-Fulton marine pageant and participated in arrangements for the welcoming of Theodore Roosevelt on his return to New York from his World tour, July 18, 1910.

Later he was chairman of the marine committee of the Mayor's committee for the reception of distinguished guests. In this capacity he served as commodore of the marine pageants which formed so important and dramatic a part in the receptions to Colonel Lindbergh and Commander Byrd, after their successful transatlantic flights. For three years Mr. Moran was a member of the board of governors, New York state nautical school. He is also a member of the committee on shipping of the Merchant's association of New York.

Mr. Moran is identified with various clubs and fraternal organizations. He is president of the Fox Hills Country club, Fox Hills, Long Island; a director of the Montauk club, Long Island; a life member of the Crescent Athletic club, Brooklyn; also a member of the Friendly Sons of St. Patrick, New York City; the St. Patrick's society, Brooklyn; a life member of the Columbus council, Knights of Columbus, the Elks and the Westhampton Country club.

Interested in politics, he is a member of the Woodrow Wilson club of the Twelfth Assembly district, and the Washington club of the Twelfth Assembly district, New York City. Mr. Moran is a director of the Colonial Trust Co.

He is the father of six children, of whom a son, Eugene F. Moran Jr., is identified with his business.

Turecamo Girls

(Continued from Page 21)

air compressor of Worthington make. The usual air bottles for starting air are supplied. An auxiliary generator is driven by belt from a pulley on the shaft of the main engine for use when vessel is under way. The stern tube is fitted with a Goodrich cutless rubber bearing, lubricated by a pump, belt driven from main shaft.

Attached to and driven by the main engine are the following: two lubricating oil pumps; one circulating water pump; one fuel oil transfer pump; and one large two stage type air compressor with intercoolers. Fire and wrecking pump is a special 3 inch motor driven, self-priming Carter pump. The sanitary pump is of Westco make, motor driven and is manually controlled.

A hydroil centrifuge supplied by Goulds Pump Co. is fitted for purifying lubricating oil. Oil is also filtered by a Sentinel filter and further filtered by a special type Winton filter. A lubricating oil cooler of straight tube type is also fitted. The fuel oil is purified by a duplex strainer in suction line from tanks and on the discharge side of pump it passes through a Sentinel filter.

A Decatur automatic pump and tank is fitted for fresh water pressure system, drawing from fresh water storage tanks in lazarette.

The whistle is Tyfon type, operated at 400 to 100 pounds pressure and controlled from the wheel house. Edison storage batteries of 20 five-cell trays are fitted.

A fire nozzle is located on top of the wheelhouse and there are hose connections on side of deckhouse, including wrecking hose suction. Portable Lux fire extinguishers are fitted for extinguishing oil fires. A heating boiler of National Radiator Corp. make, fitted for oil burning supplies steam for heating vessel at 15 pounds pressure.

Stack for ventilation contains muffler, exhausts and galley smoke pipe and oil tank. A well proportioned stack is fitted.

Steering Gear and Capstans

The tug has a hydro electric steering gear motor and pump located on platform at after end of engine room with pipes led aft to hydraulic rams of steering gear located on main deck, operating tiller on rudder stock. Steel watertight box protects steering gear and hawser wood grating is placed over same. A motor driven, powerful warping capstan and hawser puller is located aft. The steering gear and capstans are of American Engineering Co. make.

The tug is fitted with electric lights throughout and has all necessary running and towing lights for harbor and ocean service. A powerful searchlight is located on top of

wheelhouse. The switchboard was built by the Bath Iron Works Corp. and all electric work was installed by the shipyard. The towing lights are carried on two wood masts.

A 14 foot metallic lifeboat is stowed in chocks resting on flat topped engine skylight and is handled by a pair of davits with necessary blocks and falls. Life preservers, life ring buoys, fire extinguishers, fire buckets, axes, hose, etc., are supplied as required by United States steamboat inspection service. Rope fenders for bow, stern and sides are provided. The vessel was fully equipped by the builder with all cook's, steward's and deck equipment.

The TURECAMO GIRLS presents a very fine appearance, being beautifully proportioned and having all usual brass fittings, such as airports, door hardware, hose connections, fire nozzle, running and towing lights, searchlight, etc. finished in chromium plate to dispense with polishing.

The colors used in painting hull and superstructure give a very pleasing finish to a very fine tug.

Commerce at Los Angeles

The total water commerce at Los Angeles for the month of June aggregated a little more than \$60,000,000 in value and 1,707,000 tons in volume. This represented a slight increase over the month of May, but was about \$3,000,000 less in value than for June, 1932.

For the year ending June 30, the volume of water commerce at Los Angeles aggregated 16,231,000 tons in volume and more than \$680,000,000 in value. This was a decrease from the preceding year of approximately 3,000,000 tons in volume and \$162,000,000 in value.

It should be noted, however, that these figures include only the commerce of Los Angeles harbor, whereas a large volume of oil shipments have been diverted to Elwood and El Segunda and other oil ports of Southern California. The figures for Los Angeles harbor, therefore, do not indicate the true economic status of Southern California, inasmuch as the business of these other oil ports is centralized in this region the same as is that of Los Angeles harbor.

Exports for the year fell off a little less than \$14,000,000 in value and 800,000 tons in volume. Imports, however, showed a comparatively small decrease as did also commerce with Hawaii. Domestic trade in all lines showed a decrease aggregating more than \$140,000,000, but it is notable that for the month of June domestic trade was nearly the same in value as for the same month of last year. Moreover, there is a distinct increase in demand for shipping space at the present time, indicating that water commerce as a whole is making a very decided advance.

Railway Dry Dock

(Continued from Page 18)

equipped with flat steel plates between which the rollers operate. By this means, the friction is minimized and the necessity for lubrication is entirely eliminated.

Two chains arranged on an endless system and operated by an electric hauling machine are used for hauling the cradle. The hauling chains, of heat-treated manganese cast steel, without welds, pass over toothed sprocket wheels on the main shaft of the machine and then back along the track. The lower end of each is attached to a smaller backing chain, which passes through a submerged sheave, then returns on itself and the other end fastened to the cradle. The hauling machine is sufficiently powerful to haul a capacity load in 20 minutes.

Designed in the United States

This railway dry dock was designed and constructed by The Crandall Engineering Co., Boston, which has installed over 175 of this type. The retaining walls and concrete work were carried out with the collaboration of Etablissements Sainrapt & Brice, Paris. The project was for the French ministry of public works under the responsible charge of M. Outrey, chief engineer, and Mr. de Viry, engineer of new constructions, of the administration des ponts et chaussées. Commercial operation and management is under the port facilities of the chamber of commerce of Boulogne-sur-Mer, of which Mr. Lavocat is president and Mr. Prunieras, secretary general.

Propeller Club Convention

The annual convention of the Propeller Club of the United States will be held at Pittsburgh, Oct. 12, 13 and 14. The Pittsburgh Propeller club, acting as host, is making elaborate preparations for the entertainment of delegates and friends attending the convention. Arrangements are being made for reservation of seats for the Navy-Pittsburgh football game, Oct. 14.

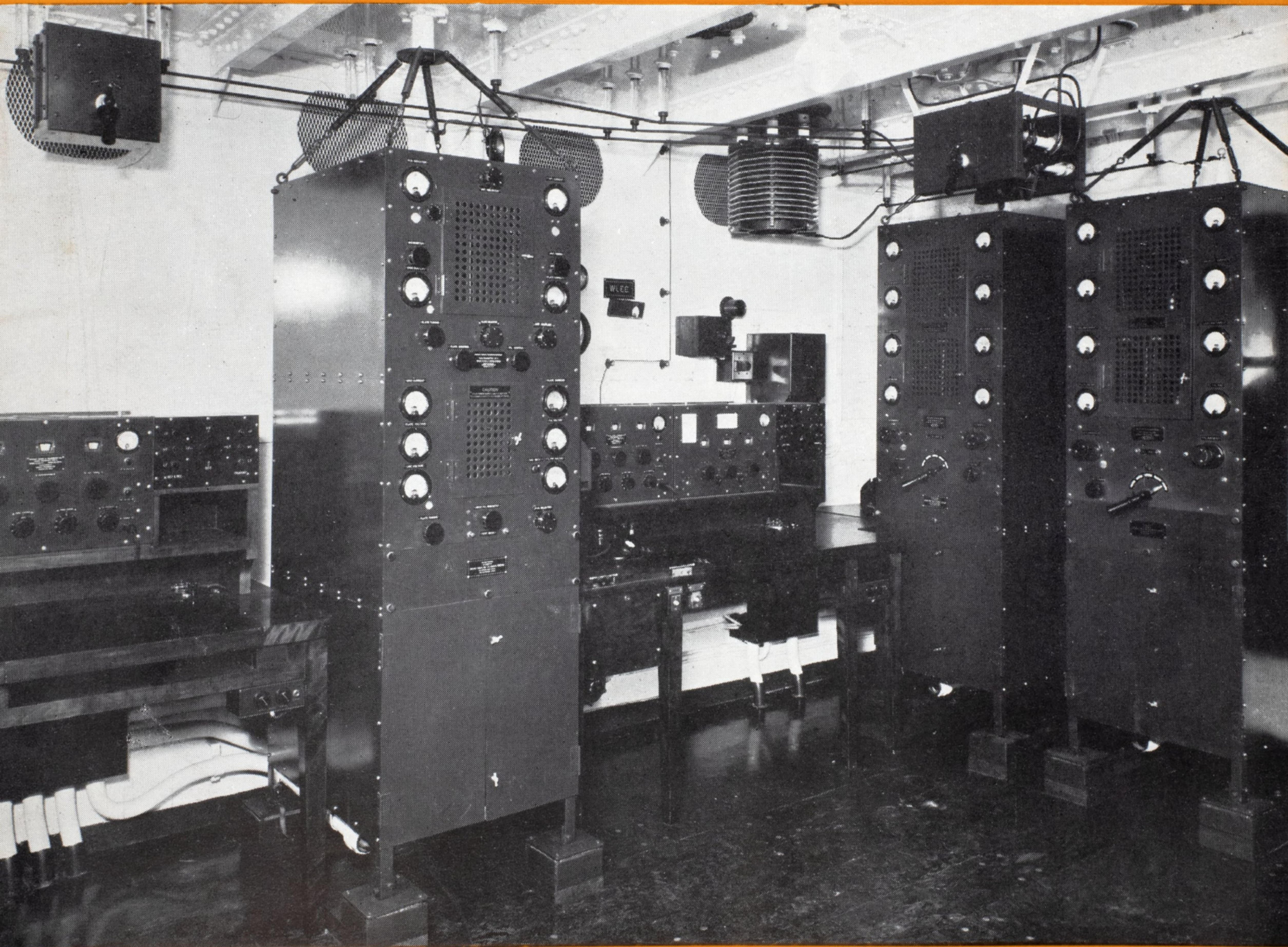
The convention business sessions are of more than usual importance. Constitutional changes necessitated by growth in membership and enlargement of activities will be presented. The agenda for discussion at the convention is being prepared. A detailed program will be sent to members of propeller clubs throughout the country by Arthur R. Bush, secretary of the Propeller Club of United States, 17 Battery Place, New York.

Arthur M. Tode, national president, made a radio address on July 14 on the subject of "Interesting American People in American Shipping."

Marine Review

Reg.
U.S.
Pat.
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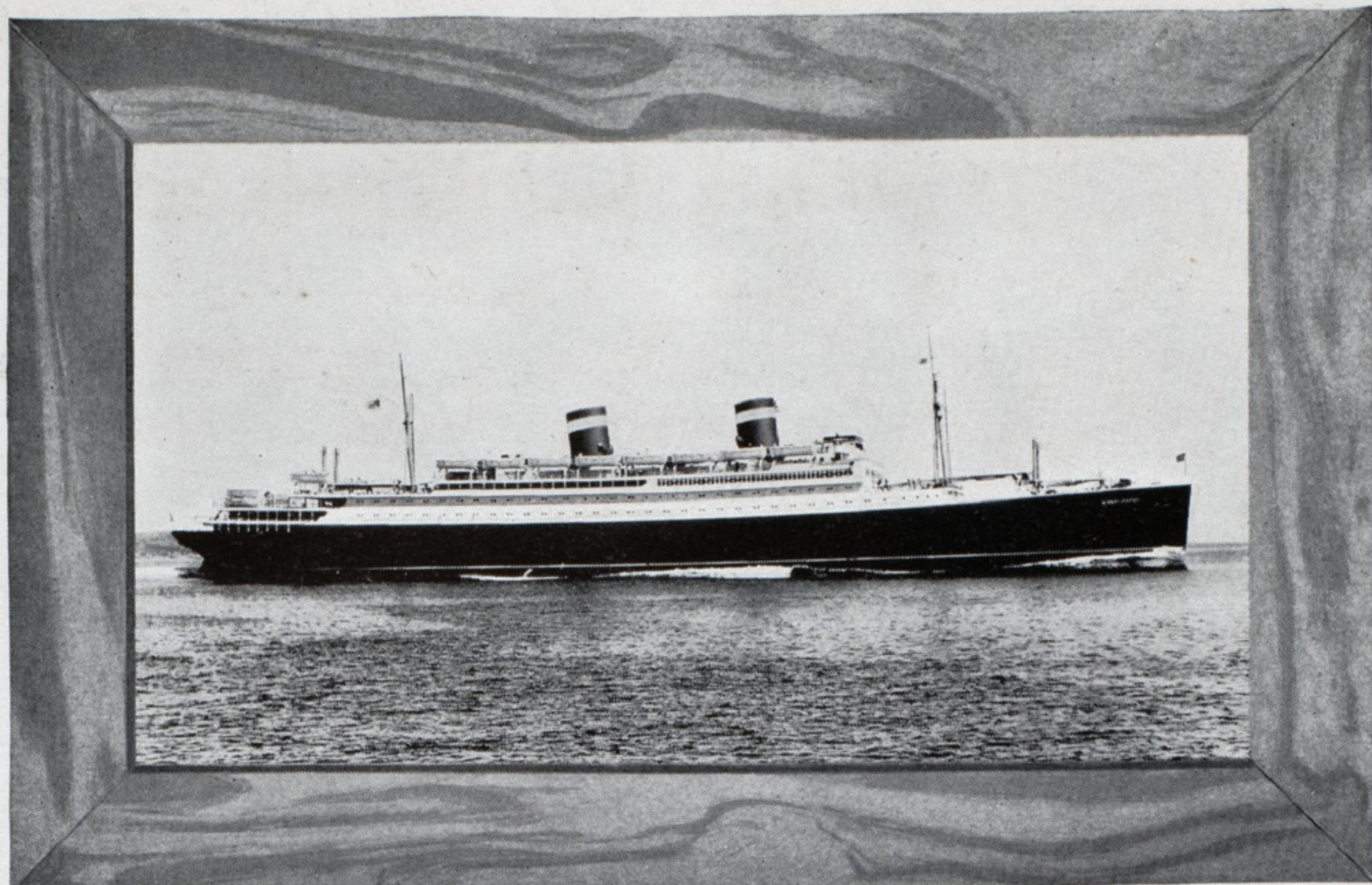
*The National Publication Covering the Business of
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Radio Room—S. S. WASHINGTON

August, 1933

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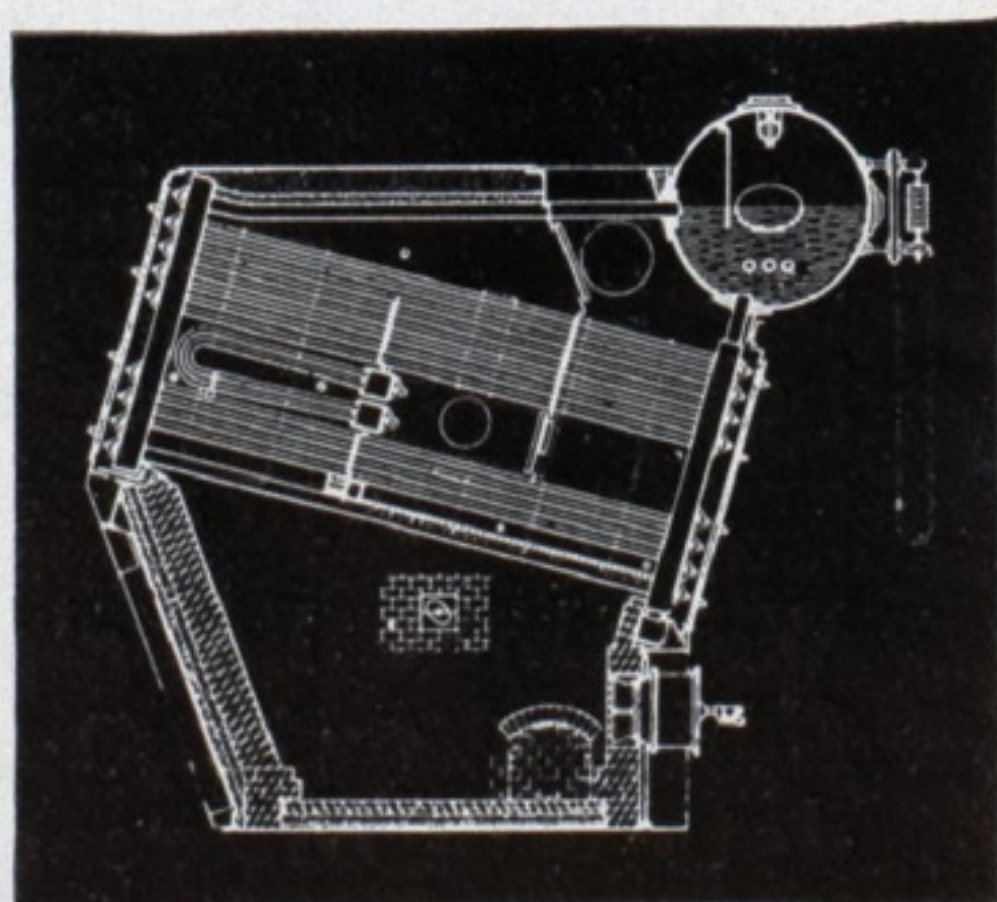
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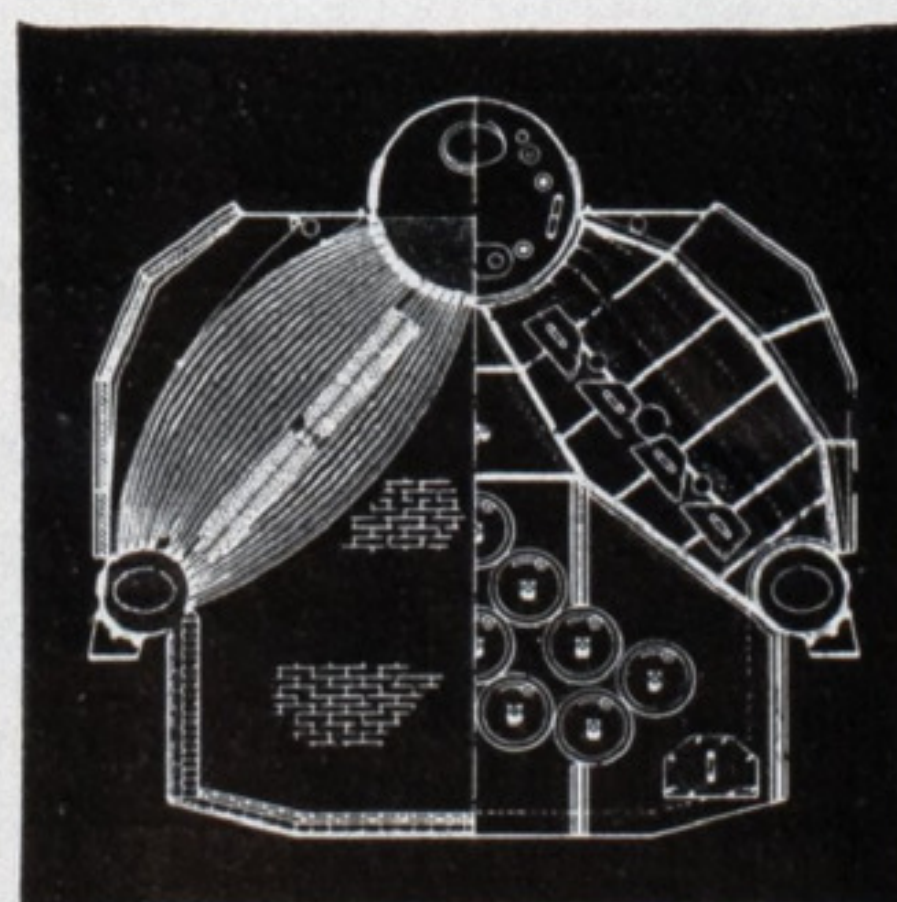
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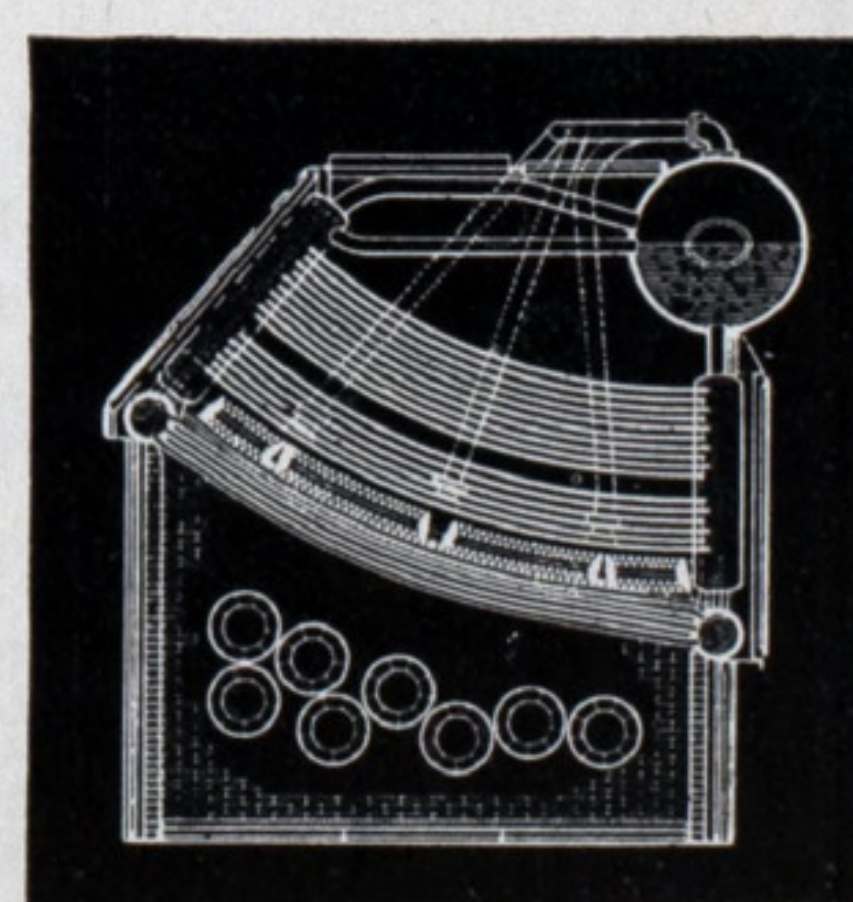
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NEWPORT NEWS

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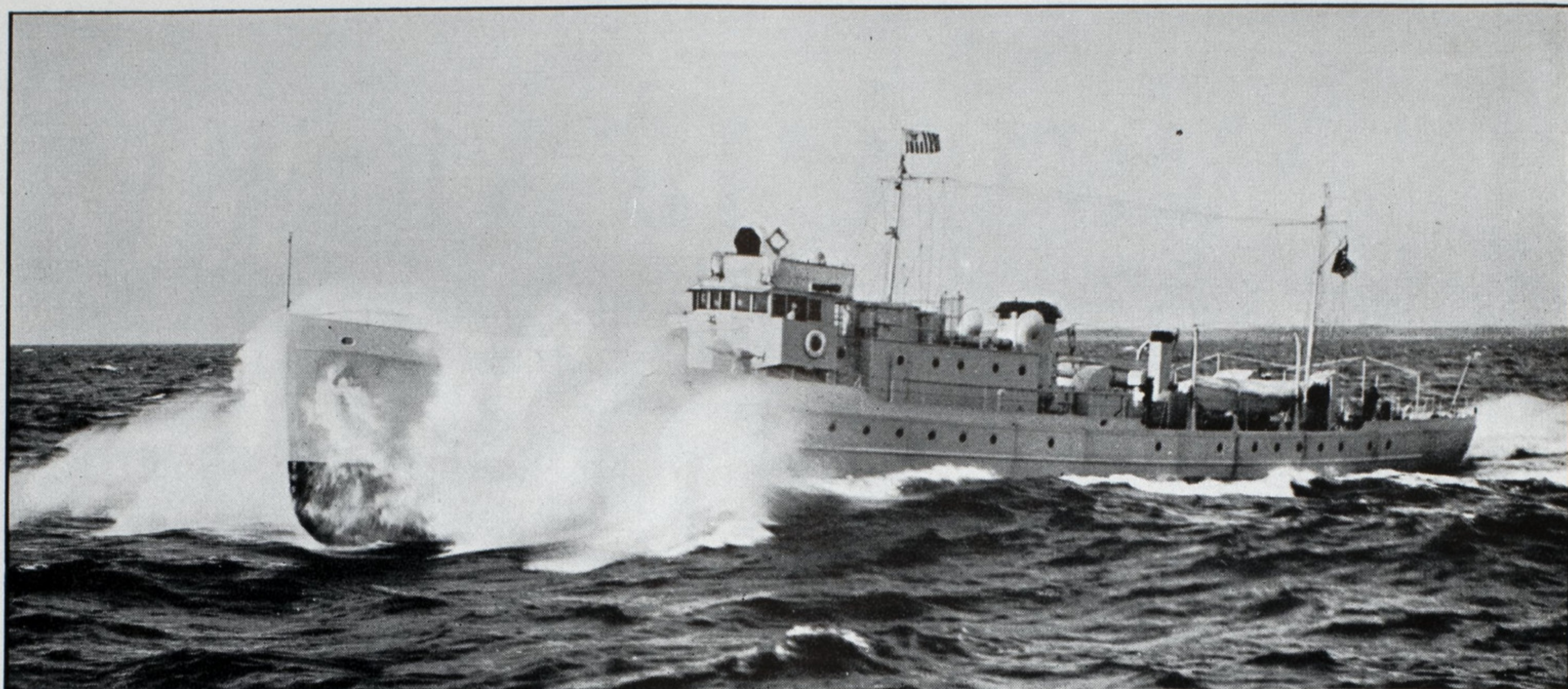
In the meantime send for any of these helpful books: "Marine Lubrication—Motorships," "Turbine-Propelled Steamships" or "Steamships with Reciprocating Engines." Any of these will be sent you free, with no obligation. Just address Vacuum Oil Company, Inc., Marine Sales Dept., 26 Broadway, New York City.



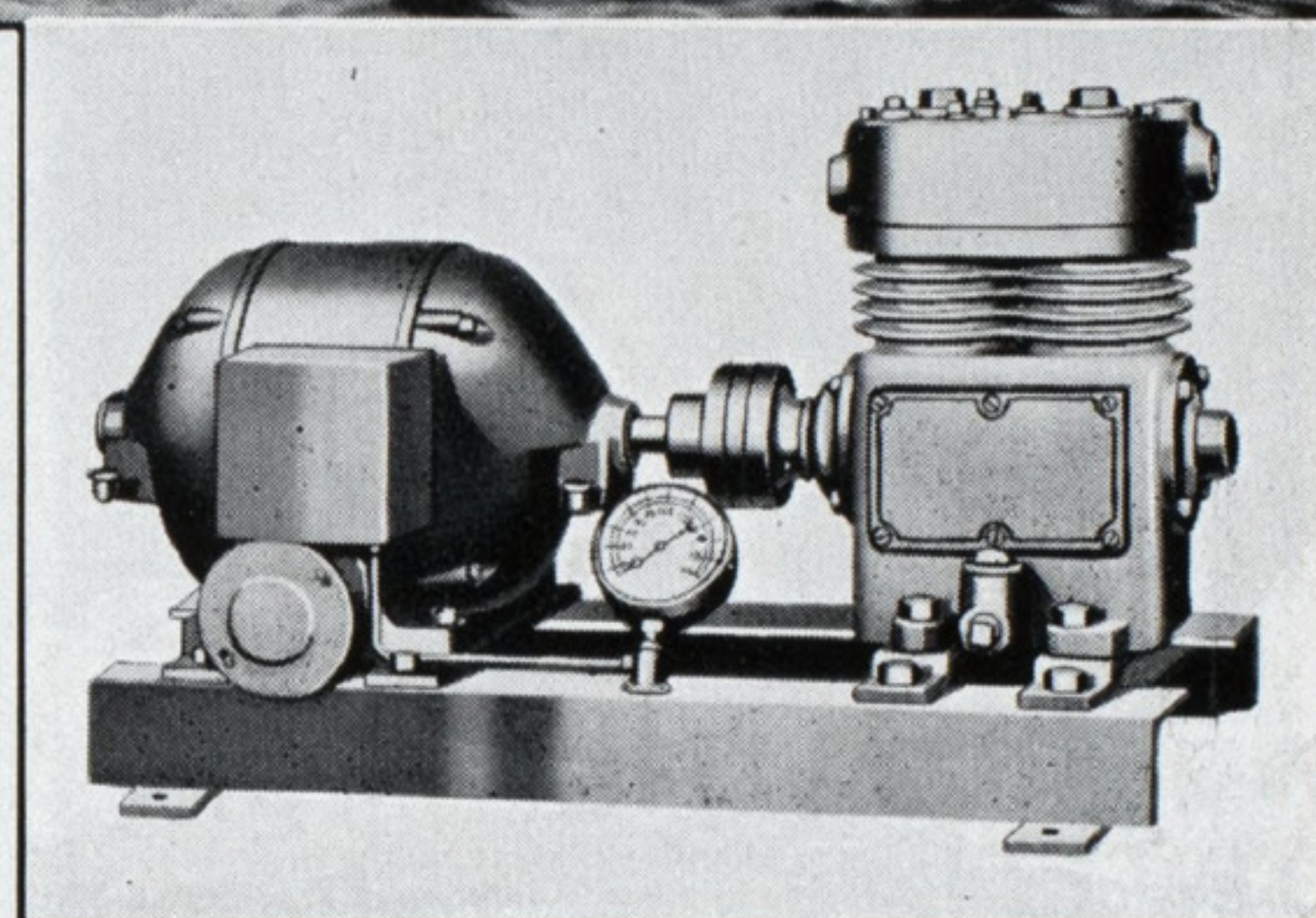
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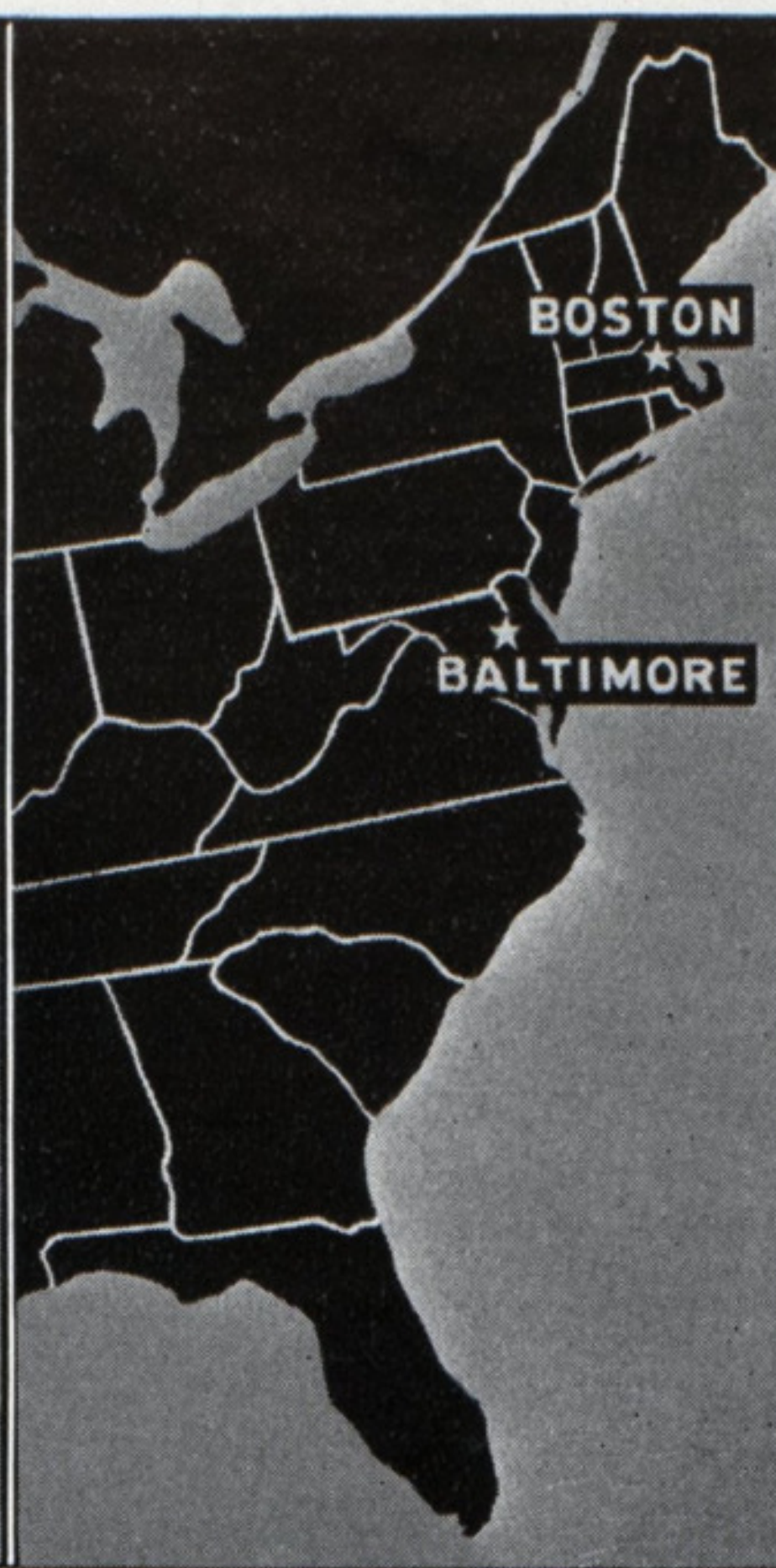
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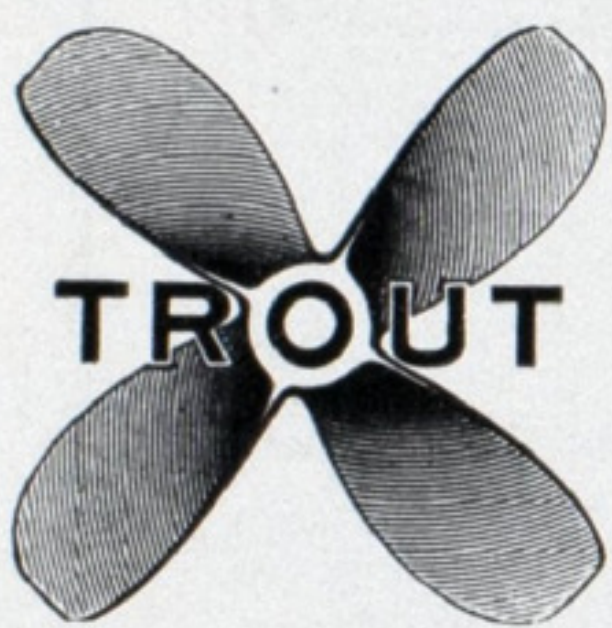
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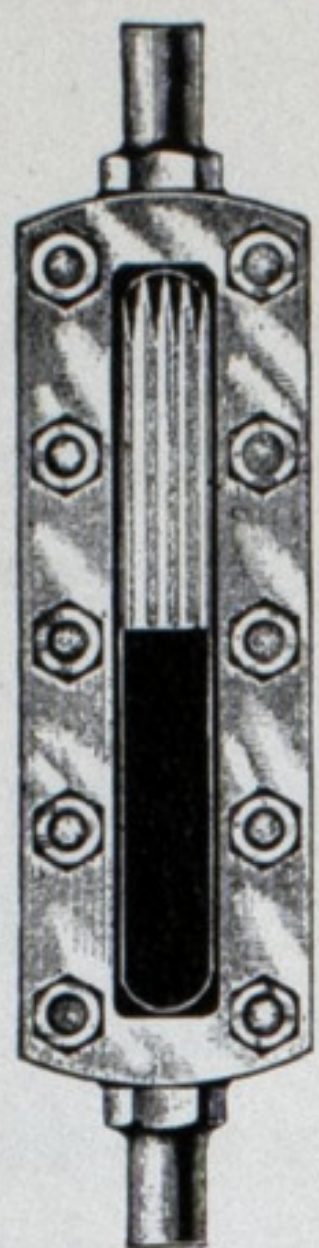
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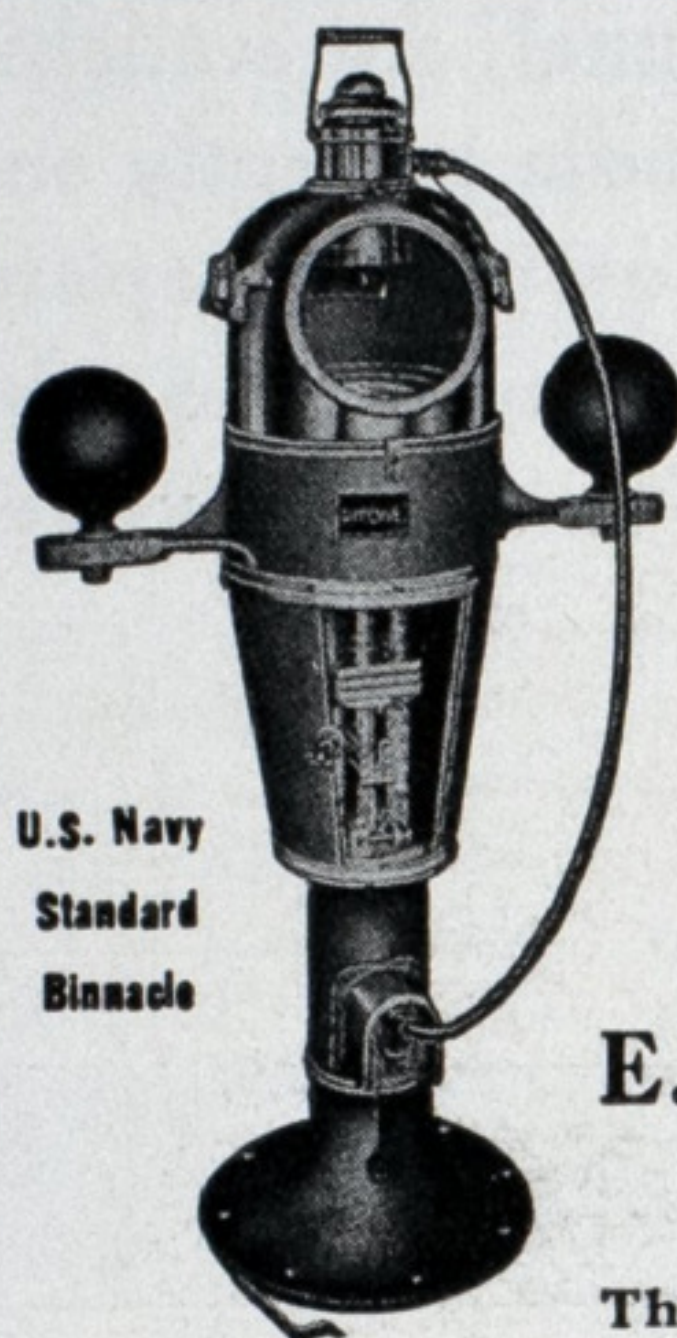
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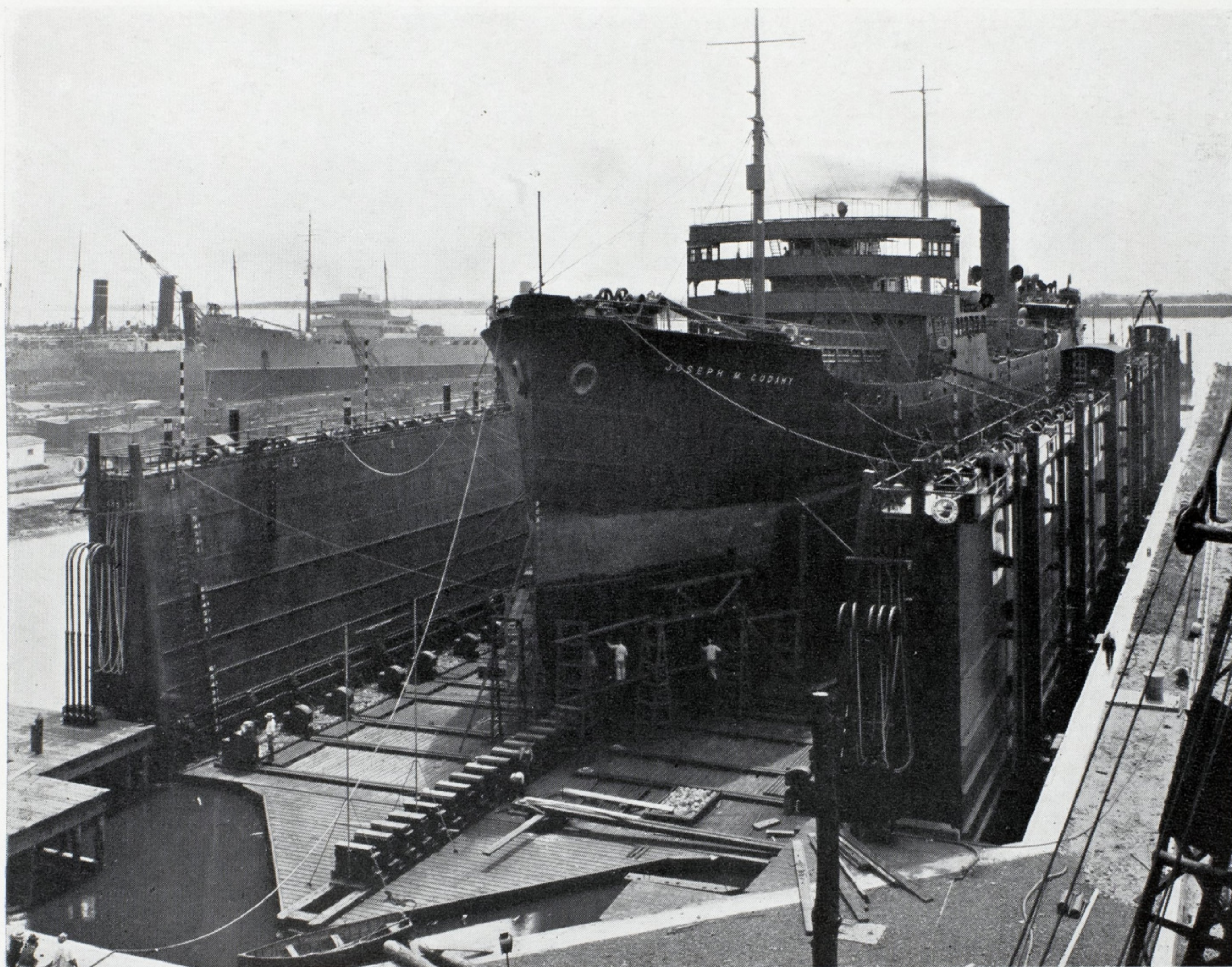
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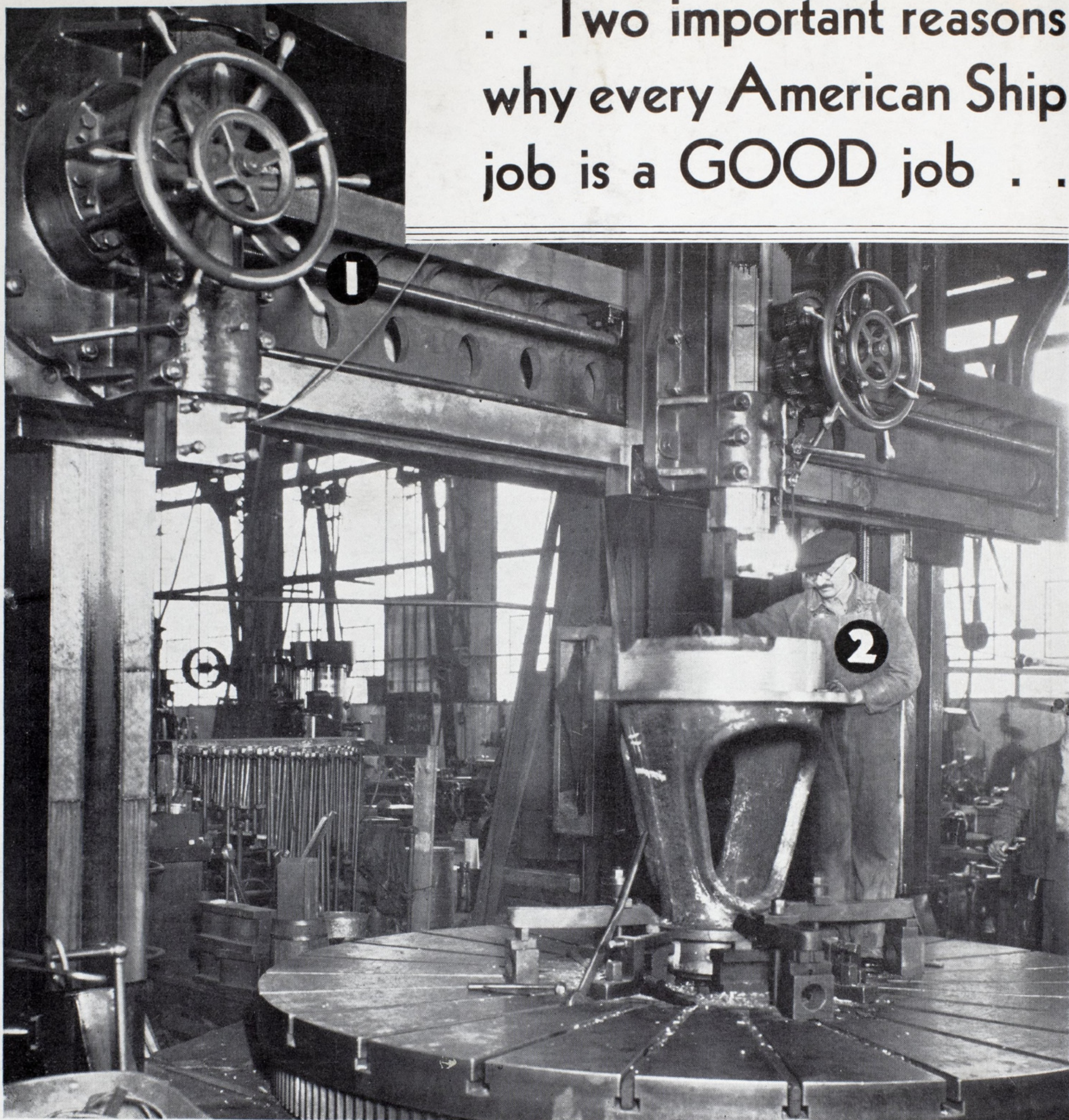
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